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THE

POPULAR ENCYCLOPEDIA;

BEING A GENERAL DICTIONARY OF
ARTS, SCIENCES, LITERATURE, BIOGRAPHY, HISTORY,

AND

POLITICAL ECONOMY.

REPRINTED FROM THE AMERICAN EDITION OF THE "CONVERSATIONS LEXICON."

WITH CORRECTIONS AND ADDITIONS,
SO AS TO RENDER IT SUITABLE TO THIS COUNTRY, AND BRING IT DOWN TO THE PRESENT TIME.

WITH

DISSERTATIONS

ON THE RISE AND PROGRESS OF LITERATURE,
BY SIR D. K. SANDFORD, A.M. Oxon., D.C.L.

ON THE PROGRESS OF SCIENCE,
BY THOMAS THOMSON, M.D., F.R.S.L. & E., &c. &c.

AND

ON THE PROGRESS OF THE FINE ARTS,
BY ALLAN CUNNINGHAM, Esq.

VOLUME III.—PART I.

GLASGOW:
BLACKIE & SON, 38, QUEEN STREET,
AND 5, SOUTH COLLEGE STREET, EDINBURGH.
ENGLAND, including WALES; the southern and larger portion of the island of Great Britain, is situated between 50° and 55° 45' N. lat. and 1° 50' E. and 6° 40' W. longitude. It is bounded by St George's channel on the west, the German ocean on the east, the English channel on the south, and Scotland on the north. Its figure is triangular, the base of the triangle being formed by a line drawn from the South Foreland in Kent to the Land's End in Cornwall; the eastern side, by a line drawn from Berwick to the South Foreland; and the western side, by another line commencing at Berwick and terminating at the Land's End. The dimensions of the triangle thus formed, are: base, 340 miles; eastern side, 345 miles; western side, 425 miles. North of the Humber, the average breadth does not amount to one-third of the average breadth south from that point. The superficial area of England and Wales has been estimated at 37,784,400 acres, of which about 10,000,000 are uncultivated.

Sketch of the Civil History of England.—Without entering particularly into the arguments which make it probable that England was originally peopled by the Gaels, from the opposite shore, it may be remarked, that, from the Romans, we have received the first historical account of the actual state of the country. When Caesar was prompted to invade this island, he found the natives numerous, and expert in all the arts of barbaric war. Although the climate is not remarkable for heat, they went almost naked; they painted their bodies a blue colour, decorating them with figures of various objects, particularly of the stars, of the sun and moon. Their towns were little superior to the kraals of the Hottentots. Their fortifications, like those of New Zealand, were formed of palisadoes, or of trees, piled upon each other. They had horses, and even used them in battle; but they mounted not upon their backs, they yoked them to what the Romans called chariots, probably a rude kind of carriages; and by driving headlong upon their assailants, they endeavoured to compensate for their want of discipline, and the regular arts of war.

Cæsar landed on the coast of England several times, but could not be said to have effected a permanent conquest. Britain, indeed, presented little to interest the man, whose ambition grasped at the sovereignty of the Roman empire. The attempt which Cæsar left unfinished, was renewed by Claudius, and his success was greater. Retaining the noble resistance made by Caractacus, and Boadicea. See the article Britain.

Agricola, the general of Domitian, finished what Cæsar had begun. He extended his conquests to the northern part of the island; his fleet circumnavigated the whole. To secure his conquests he erected a fortification, stretching between the Forth and the Clyde, and of which the remains are yet visible. Adrian abandoned this fortified frontier, and retiring a considerable way, formed another rampart between the Eden and the Tyne. In place of a rampart, Severus afterwards substituted a wall, which withstood the attacks of the northern Britons, till the successful invasion of the Roman dominions by the surrounding nations forced them to withdraw their legions from Britain, for the purpose of defending the more important parts of the empire. This happened about the beginning of the fifth century.

The South Britons were now free, but their long subjection to the Romans had unpledged them for the enjoyment of freedom. They could not now withstand the attacks of their ferocious northern neighbours. The Roman wall, no longer defended by Roman discipline and courage, proved a feeble barrier. The Scots and Picts, from the north, quickly passed it, and drove the terrified Britons to the southern extremities of the island. In this situation they could devise no other means of defence, than to invite the Romans to resume that superiority over them, which they had formerly possessed. The Romans, unable to repel the invasions of the northern tribes from the vicinity of Rome itself, little regarded the petitions of their former subjects.

The Scots and Picts, satisfied with the plunder which they had obtained, returned homewards; but, when the Britons, supposing that they were now to live in peace, ventured to leave their lurking-places, they were informed of the approach of another army, more numerous than that which had just ravaged their country. Less able to defend themselves than formerly, they thought only of counting the aid of some more powerful people. The Saxons, a nation inhabiting the northern parts of Germany, were, at that time, famous for their bravura, and the boldness of their piratical expeditions. By gifts and promises, the Britons hoped that they might induce the Saxons to undertake their defence; an experiment of which the consequences showed them the danger. The Saxons, inured to warfare expeditions, willingly accepted the invitation. Their own country was not the most fertile, and could scarcely support the number of inhabitants which it contained; they hoped, that, in Britain they might acquire new settlements, more fertile than those which they were to abandon; and they doubted not of their being able to defend them.
Notwithstanding the terror which had been impressed on the Britons by the Scots and Picts, the Saxons seem to have reckoned these tribes by no means formidable. They despatched only three ships, containing 1600 men, under the command of Hengist and Hwitga, brothers of Ethelwulf, at that time king of the Britons, received them with joy, and assigned them the isle of Thanet for a habitation. They immediately marched against the northern foe, and justified the report of their valour, by obtaining a complete victory.

The Saxons settled in the districts allotted them by the Britons; but being so long accustomed to war-like undertakings, they were unwilling to cultivate the arts of peace. They remarked the effeminacy of the nation who had invited them into the island; they saw that the soil and climate of Britain surpassed those of their own country; they were convinced that nothing would be more easy, than to establish themselves in a complete superiority over those whom they had come to protect. The arts of modern policy were little known to these uncultivated tribes. They seem not to have laid hold of any pretended breach of faith in the Britons, to their disadvantage, and they invited over re-enforcements of their countrymen, that they might render their settlement secure; and that they might be in a condition of giving laws, rather than of receiving them.

The Britons were soon convinced of the folly of their proceedings. They perceived that the Saxons, whom they had invited for the purpose of protecting them, were to become enemies more formidable than the Scots and Picts, from whose arms they had so earnestly sought to be rescued. They could invite no other nation to their protection; even had they known such as were able and willing to assist them, their recent experience had shown them the danger of such assistance. They were compelled to slack off their lethargy, and to make some efforts for their independence. The Saxons were immediately attacked; but they were prepared to defend themselves. The Britons, indeed, exerted themselves much more vigorously than had been expected. Many battles were fought with various success; but with uniform cruelty. The history of these transactions is dark and confused. In this period, the fancy of writers has placed an Arthur, and attributed unto him events most remarkably resembling those of romance than history. But whatever obscurity may be in the narrative of these transactions, it is sufficiently certain, that, after a struggle, which continued one hundred and fifty years, the Saxons remanned entire masters of the country; and in 585, the southern part of Britain, with the exception of Wales, was divided into seven kingdoms, well known by the name of the Heptarchy, and governed only by Saxon princes. As this division forms a principal era in the ancient geography of the country, it may not be improper to lay before the reader the mode in which South Britain was at that time divided.

1. Kingdom of Kent, founded by Hengist, in 473, containing Kent. This kingdom ended in 871.
2. Kingdom of South Saxons, founded by Ella, in 491, containing Sussex, Surrey. Ended in 673.
4. Kingdom of East Saxons, founded by Cerdic, in 512, containing Cornwall, Devon, Dorset, Somerset, Wilts, Hants, Berks, Lancaster. Swallowed up the rest, in 827.

The history of the Anglo-Saxons, while the country continued to be divided into so many small and independent kingdoms, is not less confused than that of the period which immediately preceded it. Each prince was continually at war with his neighbours, and Endeavouring to obtain for himself the entire sovereignty. Each state was, in its turn, annexed to some of its more powerful neighbours; and, at length, in 827, Egbert, by the exertion of much valour, and the influence of a superior capacity, united in his own person the dignity of which had formerly been seven kingdoms; and gave the whole name of England, a name which has it still retained.

Egbert did not long enjoy in quiet his extensive dominions. The Danes, issuing from those regions which had formerly been possessed by the Saxons themselves, began about this time, to harass, by their inroads, their more southern neighbours. When Egbert had reigned only five years, they landed on the English coast, and carried off a considerable booty. Encouraged by their success, they returned the following year, with a fleet of 35 ships, and a great body of men. Egbert attacked them, but, though the Danes lost some of their ships, they could not be prevented from escaping to their ships with their plunder. Far from being discouraged by resistance, they returned after an intermission of two years; and to show that they meant to persevere in the invasion of the Saxons, they entered into an alliance with the Cornish Britons. Egbert again met them, and again defeated them; but while he mediatised some scheme for the permanent defence of his kingdom against the troublesome invaders, he suddenly died. This event took place in 838.

Egbert was succeeded by Ethelwulf, his son, a prince remarkable only for his superstition. The Danes continued almost annually to visit the coasts of England; and notwithstanding their being frequently defeated, they never failed to return. Ethelwulf was ill qualified for making any systematic defence. By giving part of his kingdom to his son Athelstan, he adopted the mode of conduct which was most likely to occasion a civil war, had not the terror of the Danes prevented the Anglo-Saxons from entertaining any thoughts of internal insurrection. Ethelwulf was deficient in military capacity, but he had other qualities which were thought to compensate for this defect; and he contributed to the safety of his kingdom; he inferred, that to secure the favour of heaven, was the most proper method of ensuring worldly prosperity; and he was taught to think, that the most proper way of securing the favour of heaven, was to secure the good-will of heaven's agents upon earth. To effect his purpose, he undertook a pilgrimage to Rome, where, by his liberality, he endeavoured to attain the benediction of the church. To the ecclesiastics of that city he granted annually 300 mances, of which 100 were to support the lamps of St Peter, 100 to support those of St Paul, and 100 for the use of the Pope. When he returned, he found that his piety had not prevented the Danes from continuing their ravages, or his son, Ethelhald, from usurping his dominions. No misfortune, however, could alter his pious resolutions. He prevailed on his son to be contented with one half of his territories; he might prevail on his subjects to demand less; and soon after died, leaving behind him, particularly among the clergy, the reputation of a saint.

Ethelwulf left his dominions to his sons, Ethelhald and Ethelbert, but these sovereigns did not long survive him. They died in 866, and were succeeded by their brother, Ethelred, whose reign was distinguished, like those of many of his predecessors, by suc-
cessful inroads of the Danes. The English depended so much on the beneficial effects of Ethelwolf's devo-
tion, that his death meant a loss of all defence; besides, the different kingdoms of the heph-
tarchy, though subjected to one sovereign, were far from being pleased with their constrained union; and each of them convined at the mischief done to the rest, hoping that thus they might soon recover their independence. 

Alfred, who succeeded to the throne, was brother to Ethered, and fourth son of Ethelwolf. He had accompanied his father in his pilgrimage to Rome, but was willing to have other merits than such a pil-
grimage could bestow. He applied with much suc-
cess to the learning then known, while he exer-
cised himself in such warlike occupations as might qualify him to take an active part against the enemies of his country. The success of his application was soon visible in the general prosperity of his reign; for, though at first frequently vanquished, the acti-
vity of his mind continually pointed out to him new resources, and the solidity of his judgment enabled him to make the best use of them. He drove the Danes from the island, and took such measures as, for some time, prevented their return. He rectified the errors of his predecessors, in all things, consulted the true interests of his people. The char-
acter of Alfred is drawn in colours so shining, that the truth of the picture is liable to suspicion. He appears, indeed, to have been a good and great prince; but while his faults, which, in common with all men he must have possessed, have been entirely concealed; his virtues, have, perhaps, been some-
what exaggerated. He died in 901, leaving his kingdom to Edward the Elder, his second son.

The commencement of Edward's reign was dis-
turbed by the pretensions of Ethelwald, son of Ethel-
berht, Alfred's elder brother. At length, however, the usurper fell in an engagement. Edward di-
rected his arms against those Danes, who, during former reigns, had been permitted to settle in the island, but who were generally much inclined to pro-
mote disturbance. In his contests with them, as well as with those who continued to resist his territories from without, he was generally successful, without being able to gain such a decisive advantage as might prevent the future incursions of that restless people. Edward reigned twenty-four years.

Athelstan, his natural son, who succeeded to the throne in 925, continued his father's work, and, like his father, was generally successful when he could bring them to a fair battle, but never was able effectually to curb their power. Constantine, the Scottish King, refused to give up a Danish prince who had taken shelter in his dominions; for this offence he was attacked by Athelstan. According to the English historians, the Scottish monarch was, on this occasion, forced to do homage for his king-
dom. The Scottish historians contradict this asser-
tion. Neither of the parties pretend to prove what they affirm. The truth is, the practice of one mon-
arch or chieftain doing homage to another, for cer-
tain portions of their possessions, was in these days not uncommon. Some of the kings of England did so to those of France, for certain provinces in that country, and the probability is, that some of the Scottish kings may have similarly done homage for the debatable places on their territory, without inferring universal

submission.

Edmund, in 941, succeeded his brother Athelstan. He had reigned only five years, when he was mur-
dered by a robber at a public dinner.

Edmund was succeeded by his brother Edred, a prince of a more satisfying character, better known by the name of St Dunstan, treasurer; and governed his kingdom entirely by the monk's counsels. The saint did not prove an excellent minister. His most important event was the establishment of the celibacy of the clergy.

Edwy, who succeeded Edred, had good reason to regret the power which the clergy had obtained under his predecessor. He had married Elgiva, his second or third cousin, contrary to the will of some of the dignitaries of the church; and it was a precept of the precepts of the canon law. Such was the power of the monks, and such their daring insolence, that they caused the queen to be taken from the palace by force. They disfigured her face with hot irons, and sent her into Ireland. Seizing an opportunity of escaping, she returned to England, and was hasten-
ing to her husband, when she was intercepted by the ecclesiastics, and put to death. Edwy, to avenge

his quarrels with the monks, required from Dunstan an account of his conduct while treasurer. Dunstan, who had expected that his sanctity would have screened him from all such demands, refused to comply. Edwy banished him, but the saint's influence was not diminished. He induced one half of Edwy's subjects to rebel, and to set up in opposition to him his brother Edgar. Dunstan returned, and fomented the rebellion, under which Edwy gave Edgar

possession of the whole kingdom.

Edgar, who, through the influence of Dunstan, had been raised to a throne, during the life of his brother, was directed in his government chiefly by the saint's advice, even when he became sole sovereign of the kingdom. He was, consequently, much in favour with the monks; and though, in every respect, his life was uncommonly licentious, they thought proper quietly to indulge him in all his excesses. For forcing a nun from a convent, and enjoying her by violence, his penance was to forbear wearing his crown for three days, and to make an offering in his

vices, governed with vigour and with prudence; and he took such measures for the defence of his kingdom, that he enjoyed peace during the greater part of his reign. In 957, he was succeeded by his son Edward.

This prince, generally known by the name of Ed-
ward the Martyr, was, even more than his father, under the guidance of the monks. During his reign, the regular clergy obtained a complete victory over the seculars, two bodies between which the most violent contests had long subsisted. The vic-
tory was obtained chiefly by the abilities of Dunstan, who, in his turn, was exposed to many

mischief. The succession of Edward had been opposed by Ethelred, son of Edgar by Elfrida; and, to make way for her son, Edward was put to death by Elfrich's order, while he visited her at her own house.

Ethelred now succeeded without opposition; but, as he was still a minor, the government was feebly conducted, and the Danes, who, by degrees, had obtained many settlements in the best part of the country, showed an evident intention of obtaining the sovereignty of the whole. In this they were assisted by the renewed invasions of their country-
men. The degenerate English courtiers, encour-
aged, by giving the Danes money, to prevent their destructive ravages. The consequence was what might have been expected, they returned only the more suddenly. Animosities between the English and the Danes who had settled among them, became daily more violent; and a general massacre of the latter is said to have been projected, but it is not prob-
able that ever it was executed. Many cruelties, how-
ever, were exercised upon them; but this circumstance, instead of intimidating the Danes, and rendering their incursions less frequent, only stimulated them to more decisive attacks. Twain invasion was kept in check by a powerful army. Ethelred was called to
ENGLAND. (CIVIL HISTORY.)

take refuge in Normandy. Seizing a favourable opportunity, he afterwards returned, but found in Canute, afterwards, the Great, an adversary no less formidable than his father. 

Ethelred left his kingdom, in 1016, to his son, Edmund, who, in the defence of his territories, displayed uncommon valour; but the power and superiority of the Danes were now established too firmly to be shaken. Notwithstanding every exertion he was compelled to divide his kingdom with Canute, and when he was assassinated, in 1017, the Danes succeeded to the sovereignty of the whole.

Canute, generally called the Great, espoused the widow of Ethelred, that he might thus reconcile to himself the minds of his new subjects. He obtained the name of Great, not only on account of his warlike, political, and civil qualifications, all of which seem to have been above the common rank, but from the extent of his dominions, being master, not only of England, but of Denmark and Norway. After the conquest of England, he passed the greater part of his life in those countries. In 1016, he died, and, in England, he was succeeded by Harold, distinguished by the name of Harefoot.

The reign of Harold was short and inglorious, that of his brother and successor, Hardicanute, was disgraced by tyranny. So violent, indeed, was his administration, that, when he died, the English placed Edward, a prince of the Saxon race, upon the throne.

Edward the Confessor, was created king in 1042. His reign is remarkable for his practice of the civil, rather than of the military virtues. He had resided long in Normandy, and had acquired knowledge superior to that of many of his countrymen. His superstition, however, was unbounded; and by his complaisance to the monks, he, perhaps, partly acquired his exalted character. His reign, indeed, was long and prosperous: but this he owed rather to accident than to his own abilities. He compiled a system of laws, which long commanded the admiration of his countrymen. He died in 1066, but left behind him no son; for though he had married Editha, a beautiful woman, he exercised his temperance by refraining from cohabitation. His virtues pleased the monks, and after his death they created him a saint.

Edward having no offspring, Harold, the son of earl Godwin, seized the crown, pretending that it was bequeathed to him by the late king. As his pretensions to the kingdom were founded only on his power, Harold did not enjoy it in quiet. He found many enemies, but none so formidable as William of Normandy, who likewise pretended that he, by the will of Edward, was appointed to succeed to the English throne. To support his pretensions, William made the most vigorous preparations. To divert Harold's attention, he instigated the Danes to invade the northern counties, while he, with no less than 60,000 men, landed in the south. Harold vanquished the Danes, and hastened southwards to repel the Normans. The two armies met at Hastings. They were nearly equal in numbers, and fought with an obstinacy proportioned to the great object for which they contended. Harold and his two brothers fell, and the victory was William's. This great event took place in 1066.

Having in reality conquered the kingdom, William immediately claimed the government; but as he knew that none was powerful enough to dispute his pretensions, he had wilfully received the crown as his right, and was desirous of being accounted the lawful king, rather than the conqueror of England. For some time, he conducted the government with great moderation; but being obliged to reward those who had assisted him in prosecuting his enterprise, he bestowed the chief offices of government upon Normans, and divided among them a great part of the country. The English, however, were not content with this conduct which, though only what they had reason to expect, they accounted partial, reluctantly submitted to his sway, and seized almost every opportunity of making insurrections. After a variety of great and successful undertakings, of which there are few examples, the latter part of William's life was interrupted by domestic broils. Robert, his own son, rebelled against him; and, though he was at last compelled to submit, he proved more troublesome than any other of William's enemies. Having reigned twenty-one years in England, and conducted the reins of government, in general, with success, he died in 1087.

William, commonly known by the name of Rufus, though he was only the conqueror's second son, by the arts and intrigues of Lanfranc, an ecclesiastic, seized the English crown. He successfully quelled a rebellion of the English, and placed Edgar, a prince of the Saxon race, upon the throne.

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and the unfortunate Norman prince was
fain to purchase his liberty by relinquishing his
pension. Even Robert's Norman subjects, either
disgusted by his administration, or seduced by Henry's
courts, were induced to revolt; and Henry seiz-
ing the opportunity, invaded Normandy, made him-
self master of the country, took his brother prisoner,
and kept him in confinement during the remain-
der of his life, which continued for twenty-eight
years. Some historians add, that he was deprived
of his sight.

When Henry thought his power was sufficiently
conquered, he convinced the clergy that his friend-
ship for them was not so sincere as he had found it
necessary to pretend. He entered into a dispute
with Anselm the primate, and with the pope, con-
cerning the right of granting investiture to the clergy.

He supported his quarrel with firmness, and at
length, by compromising the matter, brought it to a
more favourable issue than might have been ex-
pected. In 1135, he died in Normandy, leaving
behind him only a daughter, Matilda; his son, Wil-
liam, having been drowned near the coast of
Normandy; an incident at which Henry's grief was
crushed.

Henry's will declared Matilda, his daughter, his
successor; but Stephen, who had married a daughter
of William L., and who, by numerous grants of his
sovereigns, had obtained great wealth, raised an
army in Normandy, landed in England, and declared
himself king. He met with little resistance: Matil-
da was obliged to yield to the superior power of her
enemy, and he, to secure himself on the throne,
which he had so violently seized, granted his people
many privileges, evincing what has often been ex-
erienced, that an usurper, whose dominion is sup-
ported by military power only, is obliged to make a
less rigorous use of his authority than he whose
title to the crown is more legal. Stephen was obliged
to court the clergy no less than his other subjects: he
thus rendered an influence, already too great, still
more exorbitant.

Matilda, though she had been obliged to yield
the crown to a more successful competitor, had not re-
linquished her claim. The earl of Gloucester, who
favourcd her cause, taking advantage of a quarrel
which existed between Stephen and some of his
principal clergy, landed with the queen in England.
Her adherents quickly resorted to her from every
quarter. Stephen was not deficient in military con-
duct. He fought many battles with Matilda's forces,
but was at length made prisoner. The queen was
once more set upon the throne; but having dis-
gusted her nobles by some exertions of her power,
which they thought too violent, they revolted. Ste-
phen was taken from his prison again to be made
a king. Many battles were fought. Matilda was
again obliged to leave the kingdom, and the death of
Gloucester, her active general, seemed to deprive her
of all her hopes of ultimate success. But Henry
Plantagenet, Matilda's son by her second marriage,
took the management of his own and his
mother's quarrel. He invaded England; and Stephen,
who immediately led his troops to oppose him, was,
at length, induced to enter into a negotiation. It
was agreed that Stephen should reign during his life,
and that, upon his death, Henry Plantagenet should
succeed him. Stephen's death made way for his rival
in 1154.

The reign of Henry II. was, in general, fortunate.
Such was the vigour of his administration, that the
turbulent state of the time, the taking away of
disturbance, and the greater part of Henry's reign
was passed in peace. The king found little difficulty
in restraining the licentious powers of his barons;
but when he attempted to abridge the exorbitant
privileges of his clergy, he experienced a more reso-
late opposition, and all his vigour was necessary to
support him in the arduous contest. The clergy
claimed exemption not only from the taxes of the
state, but also from its penitentiaries; and Becket,
now raised to the primacy, supported them in their
demands. The assassination of Thomas Becket (Becket)
subjected Henry to the wrath of the church.
He had undertaken an expedition against Ireland, at
that time in a distracted state, and consequently, an
easy prey to an invader. To complete this expedi-
tion the pope's indulgence was necessary. This
permission could not be obtained, till Henry made
many submissions to the pontiff, and promised, when
he returned, to walk in pilgrimage to Becket's tomb.
Permission was at last granted. Henry easily con-
quered Ireland; when he returned, he walked to
Becket's tomb; and lay all night upon the pavement
before it; submitted to be scourged by the hands of
monks, and thus completed the triumphs of the
clergy. The latter part of Henry's life was exposed
to many disasters, arising chiefly from the rebellious
disposition of his own family. He had appointed
Henry to be his successor; but in his own nature
patient to obtain the crown before the death of his
father. His projects, however, were disappointed;
and, in a short time, he died without leaving behind
him any children. In his foreign wars, the king was
successful. William, the king of Scotland, was
defeated, taken prisoner, and compelled to own him
Henry's vassal, and to do homage for his whole king-
dom; severe terms, which Richard, when he came
to the throne, generously remitted. It has been
remarked, with justice, that Henry was the first who
placed the common people of England in a situation
which led to their having a share in the government.
To curb the power of the nobles, he granted charters
to towns, freeing them from all subjection to any but
himself. Henry, perhaps, thought only of curbing
the exorbitant power of the barons, while he laid
the foundation of a new order of society, which at length
completely altered the government.

Richard, who, in 1189, succeeded to his father,
inherited all the superstition and romantic bravery
of the age. The frenzy of crusading had then invaded
the minds of Europeans, and the English monarch
Henry was impatient to distinguish himself in so com-
rous a scene. Disregarding the evils which must
ensue to his dominions from his absence, he made
every exertion to raise the money which was requi-
site; he hurried into the East, and acquired the
character of an intrepid soldier. Returning home-
wards in disguise, through Germany, he was basely
made prisoner by Leopold, duke of Austria. The
affectation of his subjects raised the sum necessary for
his ransom, and he returned to his kingdom, which,
during his absence, had been a scene of confusion.
The two prelates to whom he had delegated his
power, had insubordinately rebelled. John, his brother, had
insulted the crown, and hoped, by the assistance of the
French, to exclude from his right the unfortunate
Richard. Richard's presence, for a time, restored
matters to some appearance of order; but the rest-
lessness of his own disposition deprived him of all
repose. He undertook his expedition against France;
but at the siege of Chalons, in 1199, he received a
wound by an arrow, which proved mortal.

That kingdom which John had so long sought to
obtain by sinister methods, was, at length, his by
succession; but he demonstrated how unworthily
the achieved the sovereignty to which he had so eagerly
aspired. The reign of John was turbulent, disastrous to him-
self, but ultimately fortunate for his people. His
folies, his crimes, and his ill concerted attacks upon
the power of his nobles, had alienated from him the affections of almost all his subjects. In this situation, he undertook what had hitherto been found too difficult for the most prudent kings, supported by the undivided influence of the civil authority: he attempted to wrest from the ecclesiastics several of their privileges. The measures he adopted for this arduous undertaking were very violent and imprudent. He forcibly ejected the monks from their convents. The pope laid an interdict upon his kingdom, and excommunicated himself, absolving his subjects from their duties of allegiance. Had John been esteemed in England, the fulminations of the pope would not have been formidable; but labouring under their universal hatred, he was compelled to submit to the will of the pontiff, and was under the necessity of relinquishing his crown, and again receiving it as a gift from the haughty bishop of Rome. Resenting the defection of his subjects in this unsuccessful dispute, John was eager to revenge upon them the indignities which he had undergone from the pontiff. He hoped, that, in this design, the clergy, to whom he had yielded so far, would second him with all their influence. His subjects on the other hand, not only detested the barons, but feared the powerful notions of their sovereign; they saw that he had neither prudence to form a good project, nor fortitude to accomplish one which was bad. His nobles formed a resolution of compelling him to accede to such terms as might be necessary to secure their own privileges, and to abridge the prerogatives of the crown. The clergy, instead of aiding him by their influence, entered warmly into the designs of the barons. John, after making a feeble and irresolute resistance, was obliged to yield to his nobles, as he formerly had done to the pope; and at Runnymead, yet worse was to be apprehended; they signed the Great Charter, which continues to be accounted the foundation of British liberty. Though John had been compelled to sign the charter, he scrupled not to endeavour to avoid observing it. He raised a new army for the purpose of reducing his barons to what he called more reasonable terms. The barons, resolving not to lose what they had been so anxious to gain, invited to their assistance the king of France, and offered the English crown to his son. A body of French troops were landed. The barons joined them with their forces, and John could, perhaps, have obtained his end; but, before the matter could be decided by arms, he died. This event took place in 1216.

The turbulent reign of John was succeeded by that of Henry III., almost equally turbulent. The French prince, after some attempts to preserve his influence, was compelled to leave the island. Henry was but ten years of age when he was crowned; but the abilities of the earl of Pembroke, who was declared regent, retained the kingdom in tranquillity. Henry at length assumed the reins of government, and almost at the same instant, showed himself incapable of managing them. His great desire was to procure money from his subjects, not for the purpose of advancing national power, and national prosperity, but to lavish on his pleasures, which were far from being the most refined. He often disposed of them without the consent of his father; he even added to it new privileges; but he as frequently broke through every part of it. The nobles, provoked by his breach of faith, had recourse to arms. Henry was compelled to grant everything required of him; a parliament was summoned for the purpose of redressing grievances. They confirmed the charter of privileges for which the nation had so long contended; but having acquired the sovereign power, they were unwilling to give it up. It was agreed that a committee should carry on the national business, during the intervals in which the parliament did not meet. The earl of Leicester engrossed the sole power. Prince Edward opposed the barons with an army, but was defeated. Leicester, to give an appearance of right to the manifold usurpations of the nobles, called a new parliament. The barons, forced by the resistance of the people, he took into the legislature a body formerly unknown there; laid the foundation of the house of commons, and, consequently, of British liberty. Leicester, perceiving that his dissembled ambition would not be detrimental to the common people, and that the restoration of legal authority would soon be demanded, resolved to accommodate his actions to the public opinion, and to rest his ambitious projects on a new foundation. He released the prince from the confinement in which he had for some time been kept; and, pretending to restore him to his influence in the state, resolved to govern under the appearance of loyalty. The prince, who continued to be a prisoner, though he enjoyed the name of freedom and authority, found means to escape from his guards; he vanquished Leicester, who had been raised to the government for the purpose of gratifying his pleasure; and restored his father, Henry, to that freedom and power of which he had long been deprived. The king enjoyed not long the authority which had been restored to him by his son. He died in 1272.

Edward received information of his father's death when returning from a crusade, in which his love of military fame had engaged him. When he arrived in England, he succeeded to the crown without opposition. He restored to the civil administration that regularity, which, during the weak reign of his father, and the civil wars which lately prevailed, had, in some degree, been forgotten. He even added to the laws a severity which had seldom before been experienced. He undertook, and accomplished the conquest of Wales; a country, which since that period, has given a title to the king of England's eldest son. When he attempted to reduce Scotland, he was not equally successful. Though frequently vanquished in battle, and reduced to the greatest distress, the Scots were never subdued; and several times, when he imagined the arduous undertaking to be accomplished, he learnt that his enemies were completely expelled, and the nation as independent. Edward, finding himself unable to resist, made his first attack. The wars in which the king was almost perpetually engaged with Wales, with Scotland, and with France, made him require frequent supplies of money from his people, and compelled him to grant them many privileges in return for the money with which they furnished him. The common people daily rose into more importance; and the parliament, during this reign, also acquired more power. Edward had advanced as far as Carlisle with a great army, to complete the conquest of Scotland, when he was so anxiously desired, when he was seized by death, in 1307, and was succeeded by his son, Edward II.

The whole of the reign of Edward II. was unfortunate to himself, and calamitous to his kingdom. His father's last and most earnest request of him, was to prosecute with vigour the war with Scotland, which he had annexed to his English dominions; but Edward's disposition and his capacity were both unlike those of his father. The war with Scotland was carried on, but the English were almost constantly unfortunate; and at length, at Harnock, they were defeated by Robert Bruce, which ensured the independence of Scotland, and prevented the English for many years from distressing that country by their almost continual invasions. Had the mis-
fortunes of Edward consisted solely in the failure in his attempts at making foreign conquests, he might have been considered as comparatively happy; but his weak mind was incapable of regulating the lawless conduct of his barons, that led him by a bold, intriguing, and somewhat libertine disposition, joined in the conspiracy against him. Edward chose his favourites, not among the turbulent chiefs, but among such as either had a disposition resembling his own, or had the art to flatter him in his weak desires. The queen was, during the minority, appointed regent. The king was, for some time, detained in prison, and at last was murdered under circumstances of the most barbarous cruelty.

The regency of the queen was, in fact, the reign of Mortimer. Through a pretended moderation, indeed, he refused to accept a place in the privy council; but, while he governed the queen, his power in the kingdom was supreme. Edward III. soon showed a disposition entirely different from that of his father: he endeavoured to govern himself into his own hands; and commenced his reign with a vigorous exertion of power. He seized Mortimer and the queen in the castle of Nottingham. The former, with little examination, condemned to death; the latter was confined, during life, in the castle of Rising.

The sceptre was no sooner secured in the hands of Edward, than he displayed a warlike genius. He undertook the invasion of France, but returned unsuccessful; and gave vent to his discontent, by oppressing his subjects; but he found that he would be under the necessity of putting a stop to arbitrary proceedings. He was anxious again to be engaged in war; money was necessary for the execution of his projects; and without granting his subjects the redress of their grievances, he perceived that he could hope for no supply from them. He granted, therefore, a parliament, to put a stop to the measures, and promised, in all his proceedings, to respect the liberties of his subjects. He obtained the supply he so much desired; and immediately resumed his arbitrary conduct. The known vigour of Edward's character, prevented those disturbances which might otherwise have been the consequence of his measures; and a successful war, carried on at the same time against France and Scotland, prevented those murmurs which his tyranny might otherwise have occasioned.

In the former country, the king, and Edward his son, generally known by the name of the Black Prince, gained the character of accomplished warriors. The battles of Cressy and Poictiers, fought with great disparity of numbers, ended in the most complete victories which English history has recorded. To augment the triumph, the Kings of France and of Scotland were prisoners in London at the same time; and, if conquest can confer felicity, England might, at that time, be said to be happy. The Black Prince did not long survive these important victories; he died in 1376. His father died in 1377.

Eager to have the power, though in a turbulent manner, that they had acquired just notions of government. A poll-tax, of all taxes the most unjust, and in this case rendered more unjust, by imposing the same sum on the rich and on the poor, excited the indignation of all, especially of the lower ranks, by whom it was most severely felt. A blacksmith in Kent, resenting an indignity offered to his daughter, by one of the tax gatherers, with a blow of his hammer laid him dead at his feet. This was the signal for insurrection: the people flocked together from every land, and 100,000 men, under the smith, called Wat Tyler, marched towards London, claiming a redress of their grievances. But, after committing several outrages, the rebels were dispersed. Wat Tyler, while conferring with the king, was put to death; and the prudence of Richard II. who had succeeded to his father Edward, appeased the insurgents, who were preparing to avenge the death of their leader.

The conduct of Richard on this occasion, when he was only sixteen years of age, inspired hopes of a prosperous administration; but Richard was mild, perhaps effeminate, and deficient in that vigour which was necessary to curb the licentiousness, of the nobles; though guilty of few outrages, therefore, towards his people, almost the whole of his reign was turbulent and unhappy. Like Edward II. Richard had several favourites of a character similar to his own. These were hated by the barons, and were made the cause of several insurrections. The duke of Gloucester, who endeavoured to profit by the imbecility of the king's character, was apprehended, and first sent to Calais, and afterwards put to death. The duke of Hereford accused the duke of Norfolk of having received government monies into his own hands; and commenced his reign with a vigorous exertion of power. He seized Mortimer and the queen in the castle of Nottingham. The former, with little examination, condemned to death; the latter was confined, during life, in the castle of Rising.

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their services; while Henry justly dreaded that power, which, as it first raised him, could again, at pleasure, depress him. Such, however, was the vigour of his administration, and the promptitude of his measures, that every insurrection was quelled, and those who endeavoured to deprive him of power, disappointed. The most formidable rebellion which was raised during his reign, was conducted by the earl of Northumberland. The earl, having made a treaty with the Scots and Welch, raised a considerable body of forces. Being detained by sickness, from marching at their head, he gave the command of them to his son, Percy, generally known by the name of Hotspur. The impetuosity of the young general prompted him to engage the king's forces, which had marched to oppose him, before he was joined by hisWelch allies. Percy was slain; his troops were routed; and the rebels were compelled to yield to the king's mercy. During the reign of Henry IV. the clergy of England first endeavoured to confirm their power by burning such as differed from them in religious tenets. The doctrines of Wickliffe, almost the same with those afterwards embraced by the reformers, had made considerable progress in the island; and the clergy, by their burning of heretics, rendered the progress of the heretical opinions more rapid. In 1413, Henry left his son, Henry V.

The earlier years of the prince, who now ascended the throne, had been distinguished chiefly by riot and dissipation; but he no sooner saw the sceptre in his power, than he transferred his activity to pursuits more honourable to himself, and more useful to his people. The companions of his former disorders were banished from his presence. The laws were severely executed, and greater regularity introduced into every department of government. To such as transgressed the laws of the kingdom Henry was severe, in other respects his administration was mild. Those who had taken arms against his father were pardoned; merit was rewarded in every party; and Henry acquired the good-will of almost every individual. What endeared this monarch to his people more than those parts of his character which have just been mentioned, was his warlike temper; a quality which was in full exercise, but much less advantageous to his people, than the more modest virtues of justice and moderation. Taking advantage of the disorder in which the French nation was involved, and prompted by the enmity which had long subsisted between the kingdoms, Henry, in 1415, invaded the country in person, and establishing the jointed councils of the French, rendered their country an easy prey; and the celebrated victory at Agincourt dissipated the small portion of courage and unanimity which had formerly prevailed. A peace was concluded, on terms which rendered the English king no less powerful in France than in his native dominions. He was married to Katherine, the nominal French king's daughter, and his son, by her, was declared the heir of both kingdoms. Henry died in 1422, after a reign of only ten years. His life and his reign were short, but his character remained unsullied; and the memory of few monarchs has descended to posterity with more unqualified admiration.

England, during the reign of Henry VI. was subjected, in the first place, to all the confusion incident to the conclusion of a peace, and afterwards to the miseries of a civil war. Of a impetuous, but, and possessed of a mind still more weakly, he allowed himself to be managed by any one who had the courage to assume the conduct of his affairs. Margaret of Anjou, to whom he was married, was a woman of uncommon capacity; but she was by no means scrupulous of the means by which her designs were to be accomplished. Even her intentions were not always innocent; and she more frequently involved the kingdom in confusion, than used her influence for quelling such disturbances as were unavoidable. In the reign of Henry V. the English forces were weakly supported; and the celebrated Maid of Orleans, by a happy imposture, inspired her countrymen with new energies, and chased the terrified English from the French territories. The loss of France was not, perhaps, so great a misfortune as was, at that time, imagined; the civil commotions which immediately followed, were much more destructive of national prosperity. Richard, duke of York, in 1450, began to advance his pretensions to the throne, which had been so long usurped by the house of Lancaster. The nation was immediately divided into two parties. Several battles were fought. The king's imbecility would not have been capable of much resistance, but the activity of his queen frequently recalled his affairs from a situation seemingly desperate. The king was made prisoner; and the duke of York, for some time, without the appellation of sovereign, conducted the government. By the resignation of the queen, the duke was compelled to save himself by flight, and the king regained his liberty. Warwick, who had joined the York party, defeated the royal forces; the king was once more a prisoner, and the title of the duke of York to the crown, was openly asserted. Matters were, at length, compromised by a treaty, by which it was agreed, that Henry should reign during his life, and that he should be succeeded by the duke of York, to the exclusion of the prince of Wales. The queen once more nearly retrieved the royal cause. She prevailed on the northern barons to join her with their troops. She encountered the adherents of York; defeated their army, and put to death the duke. Edward, however, the duke of York's son, put himself at the head of the remains of his father's army, and encountered the royal army under the command of the earl of Pembroke. But the army of Edward was less than 14,000, and advancing rapidly to London, was, in 1461, proclaimed king.

Edward IV. had now obtained the crown, but his possession of it was far from being secure. The queen had still an army of 60,000 men, and she was more than equal to disturb the possession of the throne. Edward met her with an army amounting to 40,000. The adherents of the house of York gained a complete victory. Henry and his queen were obliged to consult their immediate safety, by wandering about the country. The former was, in a short time, discovered, and once more secured in the tower, his accustomed prison; and the latter was compelled to fly to Flanders. Edward now imagined that he was securely in the possession of a throne, and by degrees, became less obsequious to those noblemen to whom principally he owed his elevation. The nobles were offended, and Edward soon learned that the same power which raised him to a throne could tear him from it. Warwick, whom Edward had disgusted by espousing Elizabeth Woodville, while the earl was successfully employed in negotiating a marriage for the queen, endeavoured to depose the monarch whom he had been so anxious to elevate. Disappointed, however, in his first attempts at insurrection, Warwick and his associates left the kingdom. He became reconciled to Margaret of Anjou, returned to England, and a few days after he landed saw himself at the head of
The battle was fierce. Many fell on both sides; but Richard's death at length determined the contest. Richmond was immediately proclaimed king by the name of Henry VII; he was crowned in 1485; in this he was subjected to Henry's throne that had been done. Edward soon returned. Warwick hurried to oppose him; but his army was vanquished, and he himself fell in the battle. Henry was remitted to the tower. The queen, who had landed in hopes of enjoying the power of a sovereign, was confined to the same place. Henry stood after died, or, according to some, was murdered by the duke of Gloucester. Margaret was ransomed by the French king, and afterwards terminated her existence in France. Edward was now without a rival, and dedicated the remainder of his life to the punishment of those who had incurred his resentment or his jealousy; and to his passion for the female sex, by which he had always been distinguished. He died in 1483.

His son, who was proclaimed king by the name of Edward V., was then but thirteen years of age. The regency was committed to the duke of Gloucester, with the title of protector. Gloucester immediately formed a design of raising himself to the throne; and as the depravity of his mind corresponded to the deformity of his body, he scrupled at no crime which could contribute to the accomplishment of his object. He murdered master of the persons of the king, and of his brother, the duke of York, at that time nine years of age. Pretending to secure them from danger, he confined them in the tower. The duke of Buckingham, by manifesting promises was induced to favor the protector's cause. Lord Hastings, and several other noblemen, whose fidelity to the young king could not be overcome, were put to death. Gloucester, after practising the lowest arts, stopt into the throne, by the name of Richard III., in obedience, as he pretended, to the desire of the nation. The young king and his brother fell early victims to that dread and anxiety by which an usurper is always haunted. Having thus, as he imagined, secured his power, he gave way to the cruelty which was natural to him. Buckingham, by whose influence he had obtained the power, was arrested, in the manner by which he had been taught to expect: and he resolved to deprive Gloucester of the power which he had just procured for him. Henry, earl of Richmond, at that time an exile in Brittany, was considered; and the protector resolved on the family of Lancastor. Buckingham resolved to place him on the throne, but his designs were suspected by the king; and he was induced to take arms before he was properly prepared to make any vigorous efforts. An inundation of the Severn prevented his troops from marching. Provisions became scarce, and almost the whole of his followers deserted him. No longer daring to appear in open hostility, he endeavored to conceal himself from the malice of the tyrant. A price was set on his head, and the duke was soon after betrayed by one in whom he had confided. Richmond, in the mean time, had landed in England; but learning Buckingham's disaster, he immediately abandoned an enterprise which he considered as hopeless. Richard's title to the crown was confirmed by parliament; and to render his right still more unquestionable, he assumed the resolution of poisoning his wife, Anne, second daughter of the earl of Warwick, and of espousing Elizabeth, eldest daughter of Edward IV. While thus busily employed in securing to himself the crown, which had been gained by so many crimes, Richmond lived in the most prosperous and not least in the least in the least confidence. He immediately marched against the invader. Richmond declined not the encounter.
the Reformation; but this too was owing to his caprice, and to the casual situation of his private affairs. He was drawn into the necessity of a reformation in religion, or the solidity of reasonings employed by the reformers. Henry had been espoused to Catharine of Spain, who was first married to his elder brother, Arthur; a prince, who died young. Henry became disgusted with his queen, whom he says, he never greatly loved. She was somewhat older than he; all his children by her, died in their infancy, except the princess Mary; and the king was enamoured of one of the queen's maids of honour, Anne Boleyn. He had recourse, therefore, to the pope, to dissolve a marriage which had at first been entered legal, only by a dispensation from the pontiff. The pope, through his connections with Catharine's relations on the continent, found himself involved in perplexity. He endeavoured to evade the determination, or by giving an ambiguous answer to lengthen out the negotiation; but the impetuous passions of Henry could submit to no delay. To preserve his influence in England, which the pontiff was apprehensive he might entirely lose, a legate was sent to examine the cause. Catharine refused to acknowledge the authority of a court, in which no man had been employed who was so truly justice. The business was conducted in her absence; but after it seemed to be nearly concluded, the legate first prorogued the court, and afterwards transferred the cause to Rome. In this mode of proceeding it was not probable that the king would acquiesce. Wolsey, the celebrated cardinal, by endeavouring to maintain his ground with the pope and with the king, was disgraced by both parties. The great seal was taken from him, and in a short time, his numerous vexations terminated his existence.— Concerning his marriage, the king consulted the unlimited power of Rome; and the affair was carried on with the utmost dispatch. The pope concluded, after much deliberation, to dissolve his marriage; and by the advice of the bishop of Rome. Henry had other reasons for desiring to abolish the pope's authority in England. The churches and monasteries had, during the lapse of several superstitions ages, accumulated immense wealth; and the king thought it just that what was once his might be turned to the spoils of the ecclesiastics. He could not, however, with honour, deviate entirely from the received doctrine of the Roman church. He had already written a book in opposition to the reformed creed, and in defence of the Catholic faith. He held, therefore, a middle course; he continued to submit not to the pope as the head of the church, with several of the less important articles of the Romish faith; but, at the same time, he condemned the doctrine of the reformers. He published a creed; and commanded his subjects to conform to the necessity of a reformation in religion, or the solidity of reasonings employed by the reformers. Protests and annullments were made; the Catholics were equally liable to persecution, and were sometimes burnt in the same fire. Had the king adhered to the creed which he had adopted, it might have been possible, if not to believe, at least with some consistency, to have feigned belief; but Henry either could not or would not believe it. Protestants and Catholics were equally punished as to undergo almost continual changes. Often did he obtrude upon his subjects new, and, in some cases, contradictory tenets. To every new creed an unlimited assent was required; and when this assent was obtained with incredible ease, he went a step farther, and endeavoured that all his subjects should believe what he had already published, or what he might afterwards publish.

Henry's caprice was not more conspicuous in his articles of faith, than in his conduct with regard to his wives. Anne Boleyn, for some time, filled the place of Catharine; but the king, at length, became no less disgusted at her than at her predecessor. Anne, in consequence of the low station from which she had been raised, had many enemies. These accused her of conjugal infidelity. Henry eagerly seized the opportunity of an accusation. He tried, condemned, and executed. She had, it appears, been guilty only of a levity in her behaviour, which, though it cannot be commended, merits not surely a capital punishment; but Anne's guilt was the more easily discovered, that the king had formed a new attachment to Jane Seymour, another maid of honour. With a precipitancy which indicated the cause of the prosecution of his wife, he married Seymour the day following the execution of Boleyn. Seymour might, perhaps, have been discoursed like one of her predecessors, or beheaded like the other, but her presence, at that time, prevented the king's indignation. She died in childbed. Henry's next spouse was Anne of Cleves, of whose picture he had been enamoured, but whose person, when he became acquainted with her, he abhorred. He soon declared his marriage with her invalid. By mutual consent the contract was dissolved; and Henry espoused Catharine Howard, niece of the duke of Norfolk. The king's happiness was, for some time, complete; but Howard's elevation procured her many enemies; and her conduct before marriage, which had been extremely dissolute, was laid open. It did not appear, that Catharine had any stain on her life, after marriage, but the former offence was sufficient to provoke the king's most weighty resentment. He not only caused her to be beheaded, but declared it high treason for any but a virgin to espouse the king of England. About a year after the execution of Howard, he married Catharine Parr, the widow of Nevil, lord Latimer.

Had not the extravagance of Henry equalled his other vices, he might have amassed immense wealth. When he quarrelled with the pope, he was careful to dissolve all the religious houses, monasteries, and convents, and he immediately seized their revenues. It is not easy to perceive to what extravagancies his own impetuosity, and the servile complaisance of his parliament, might have hurried him; his conduct was becoming daily more capricious and tyrannical, when he died.

Henry's son, who succeeded him by the name of Edward VI., was but nine years of age at the time of his succession. His father by his will, had declared, that Edward was to assume into his own hands the reins of government, when he should attain to be eighteen years of age; and to submind not to reach that period; he died when he was only sixteen. His short reign, or rather the reign of the earl of Hertford, afterwards
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duke of Somerset, who was appointed regent, was distinguished chiefly by the success which attended the measures of the reformers. The Protanyats attained great part of the power which had formerly been enjoyed by the Cother; and, after that prince's death, she was, almost without her knowledge, proclaimed queen, and forced, very much against her inclination, to ascend the throne. Her reign, if it could be called such, lasted only a few days. Mary, daughter of Henry VIII., was Mary upon the throne. Lady Jane Grey and her husband were both confined to the tower; and, notwithstanding their pretended criminal conduct was altogether involuntary, they were afterwards executed.

Mary, a bigoted Catholic, seems to have lived for the crown, only for the purpose of re-establishing the Roman faith; and her purposes were faithfully executed by Bonner, a zealot, no less bigoted than herself. Political motives had induced Philip, of Spain, to accept of Mary as a spouse; but, notwithstanding her affection for him, she could never prevail to return his love. At the close of her reign, she, in the He, for that reason, openly despised her; and, indeed, seldom saw her, or visited England. Vexation on this account, added to other maladies, hastened Mary's end. She died in 1558.

Elizabeth, another daughter of Henry VIII., by Anne Boleyn, succeeded to her sister Mary; and, by the vigour and prudence of her administration, compensated for the feeble reigns of her two predecessors. Elizabeth, herself attached to the Protestant faith, was resolved to establish it in England, and to turn the people, of the Roman faith, to the true faith. Her activity in Scottish affairs was augmented by her rivalry and secret hatred of Mary, the queen of Scotland. When that princess's crimes, according to some, or her misfortunes, according to others, induced her to take shelter in England, Elizabeth, instead of using her with kindness, or protecting her from insult, made her a prisoner; refused to see her; retained her many years in confinement; encouraged her subjects in the accusation of her sovereign; and, at last, by an iniquitous sentence, condemned her to death. Her life's conduct were criminal or unfortunate, Elizabeth's proceedings cannot be palliated. They fix on her memory a stain which time cannot obliterate.

England was the most powerful nation which had accepted the Protestant faith; and, on that account, Elizabeth was hated by all the Catholic sovereigns, Philip, of Spain, actuated by that bigotry which so strongly marked his character, and incited by policy, as well as by personal animosity, resolved to attack Elizabeth in her own dominions, and to annihilate the lately professed English.
by the Saxon and Danish priests were three—to worship the gods—to do no wrong—and to fight bravely in battle. They occasionally recommended many other virtues: and it will not be easy to find among compositions, merely human, a more beautiful collection of prudential maxims, than in the Horamala, or oracular discourses ascribed to Odin, the chief deity of the ancient Danes and Saxons.

To this Odin, his warlike and deluded votaries ascribed all the attributes which belong only to the true God; to him they built magnificent temples, offered costly sacrifices, and consecrated the fourth day of the week, which is still so called among us to this very time. Frea, or Frigga, wife of Odin, was, next to her husband, the most revered deity among the heathen Saxons, Danes, and other northern nations. She was esteemed the goddess of love and pleasure, bestowing on her votaries a variety of delights, particularly happy marriages and easy child-births. The sixth day of the week was consecrated to her, and still bears her name. Thor, the eldest and bravest of the sons of Odin and Frea, was, after his parents, the most revered object of superstitions among the Danes and Saxons, while in their pagan condition. He was believed to reign over all the aerial regions, which composed his immense palace, consisting of 540 halls, to launch the flaming bolt, to point the lightning, and direct the meteors, winds, and storms. To him they prayed for favourable winds, refreshing rains, and fruitful seasons. To him the fifth day of the week was consecrated, and still bears his name. Besides these three, a prodigious number of inferior divinities, male and female, were adored by the Anglo-Saxons and Danes.

The acts of worship paid to their gods, were these: songs of praise and gratitude, prayers and supplications, offerings and sacrifices—incantation and divine rites, in order to express their admiration of their perfections, and gratitude for their benefits—to obtain those blessings from which they desired, to appease their vengeful displeasure, and gain their love, and to penetrate into their designs. The songs of praise composed in honour of Odin, and sung at the solemnities of his worship, were almost innumerable; and, in those songs, no fewer than 126 honourable epithets were bestowed on that god. All the other gods and goddesses had many songs composed to them, and the epithets proportioned to the power they supposed them to possess, and the degrees of veneration in which they were held by the worshippers.

As prayers constituted a very considerable part of their pagan worship, they were instructed by their priests in the powers and properties of their several gods and goddesses, and the prayers which they were to make to them, proportioned to their respective powers. They boasted greatly of their exact knowledge of the attributes and functions of the several gods, and of the prayers that were to be put up to each of them; and to this they ascribed their prosperity and success in their enterprises. But, if a favourable return to their supplication was not made, they did not hesitate to testify their displeasure against their gods, by shooting their arrows and throwing their darts towards heaven.

The Danes and Saxons were, in no sparing their offerings and sacrifices, to gain the favour and appease the anger of their vengeful and offended divinities; and they were accordingly instructed by their priests as to what kind of oblations were most acceptable to these gods. To Odin they were directed to offer them in the shape of libations, in sacred groves, and on a fat fowl, by way of sacrifice. To Frigga, the largest hogs; and to Thor, fat oxen and horses. These victims were slain before the altar, their blood received into a vessel prepared for the purpose, and some part of it sprinkled on the assembly; the entrails were afterwards inspected by the priests, to discover the will of the gods from their appearance. Some of the flesh was burnt upon the altar, and on the rest they laid and partook. In these feasts, their favourite beer and ale were not forgotten, of which they drank deep and frequent draughts, in honour of their gods, putting up some prayer or wish at every draught. In famines, or other national calamities, or at the eve of some dangerous war, all the human victims were burnt up at the altar of their gods, by our pagan Anglo-Saxon and Danish ancestors, believing them to be more acceptable than any other. These unhappy beings were commonly chosen from among criminals, captives, or slaves; but, on some pressing occasions, persons of the highest dignity were not spared.

None were more addicted to divination, or made greater efforts to penetrate into futurity and discover the counsels of heaven, than the ancient Danes and Saxons. Besides those arts of divining practised by their priests, in common with those of other nations, they also practised, and were skilled in them. They gave great credit to the predictions of old women, who pretended to consult the dead, to converse with familiar spirits, and to have many other ways of discovering the will of the gods, and the issue of important undertakings. Some of these women became so famous for their responses, that they were accounted by the greatest states as infallible oracles, and even revered as goddesses; who, if they had lived a few ages later, would have been burned for witches. In very ancient times, the Danes and Saxons, like the Britons, had no covered temples, but worshipped their gods in sacred groves, and circles of rude stones. Gradually, however, they began to build temples, and at length erected some of incredible grandeur and magnificence. In each of these was a sacellum, or chapel, esteemed the most holy place, where the images of the gods were set upon a kind of altar, before which stood another altar, plated with iron, for the holy fire, which was kept continually burning; and near it a vase for receiving the blood of the victims, and a brush for sprinkling it upon the people. They also began to set up the images of their gods in these temples. Odin's image was crowned, and set up daily, and the same day Frigga was a hermaphrodite, a bow in one hand, and a sword in the other; that of Thor was crowned with stars, and armed with a ponderous club; and those of the other gods had emblems suited to their respective attributes. There were many of such temples adorned with idols, in different parts of England, while the Anglo-Saxons continued pagans; but (as we are informed by Bede) they were all destroyed at their conversion to Christianity. Though the sacred fires were kept always burning, and though frequent, perhaps daily, sacrifices were offered in the temples of their gods, yet they also celebrated certain great festivals with peculiar solemnity. One of the greatest of these was celebrated at the winter's solstice, called the mother night; both on account of this festival, and of its being the beginning of the Anglo-Saxon year. This feast was also called Yule, a name by which the festival of Christmas is still known, in many parts of Scotland (Yule), and in some parts of England. The heathen Yule was observed in honour of the god Thor, not only with sacrifices, but with feasting, drinking, dancing, and every possible demonstration of mirth and joy. The second great festival was kept during the summer solstice; that of the goddess Frey, much in the same manner as the former. The third and greatest festival was celebrated in honour of Odin, in the beginning of the spring.
Before they set out on their warlike expeditions, in order to obtain victory from that warlike divinity. Besides those three great festivals, in honour of Thor, Frigga, and Odin, their three greatest gods, they kept many others at different seasons, in honour of Thor, Frigga, and Odin.

Such was the superstition that reigned over all those parts of England possessed by the Saxons and Danes, previous to their conversion to Christianity. The reader will observe, that though it bore a general resemblance to the ancient Druidism of the British nations, it differed greatly from it in several respects. The Saxon and Danish priests were neither held in such profound veneration, nor enjoyed so much power, especially in civil affairs, as the druids. Their speculative opinions in many things were very different; as were also the objects, the seasons, and ceremonies of their worship.

Martial valour was the peculiar boast of the ancient nations of Germany and Scandinavia, and their distinguishing characteristic. The genuine spirit and sagacity of the people are expressed in the following words of one of their chieftains: (as handed down to us by the sententious and philosophic Tacitus.) "Valour is the most glorious attribute of man, which endears him to the gods, who never forsake the valiant." It was this undaunted spirit of resolution, which more than any other circumstance, over the Roman discipline, effectually to resist their arms, and, at length, to overturn their empire. Nor were any of these nations (except the Scandinavians, who were the scourge of all Europe for several centuries) more renowned than the Saxons. Their very religion was adapted to their ferocious disposition, and contributed to preserve that romantic valour, that eager thirst after military renown and spirit of adventure, which characterized the Saxons, and, after them, the Danes. Animated by the warlike genius of the religion of Woden, the Danes, who afterwards constituted so great a proportion of the inhabitants of England, rode triumphant through all the seas of Europe; and carried terror and desolation to the coasts of Germany, France, Spain, Italy, England, Scotland, and Ireland. Their admission to the hall of ancient fame in this, that their name is . . . and desolation, and all their future happiness, they were taught to believe, depended on the violence of their own death, and on the number of their enemies which they had slain in battle. This belief inspired them with a contempt of life, a fondness for a violent death, and a thirst for blood; which are happily unknown, and seem incredible to us, who live in modern times. Their education, no less than their religion, contributed to foster this martial disposition. Many, if not the most of them, had been born in camps and fields; and the first objects on which their eyes were fixed, were arms, storms, battles, blood, and slaughter. Nursed and brought up in the midst of these terrible objects, they gradually became familiar, and, at length, delightfhl. Their childhood and their day of youth was wholly spent in running, leaping, climbing, swimming, wrestling, boxing, fighting, and such exercises as hardened both their souls and bodies, and disposed and fitted them for the toils of war. As soon as they began to lip, they were taught to sing the exploits and victories of their ancestors; their memories were stored with nothing but tales of warlike and piratical expeditions; and of defeating their enemies, burning cities, plundering provinces, and of the wealth and glory thus acquired.

This martial spirit of the pagan Danes exerted and spent itself in piratical expeditions principally, and they were so universally addicted to this practice in the 8th, 9th, and 10th centuries, that a Dane and a pirate became synonymous terms in the languages of several nations, and particularly in that of the Anglo-Saxons. Some of these pirates grew so wealthy and famous, and had such numerous fleets at their command, that they were called sea-kings; and though they possessed nothing but a single flag, they were the greatest, and most powerful monarchs, trembl

The cruelty of the Danes is painted in the strongest colours by our most ancient historians, who lived near this time. "The cruel Guthrum," says one of these historians, "arrived in England A. D. 878, at the head of an army of pagan Danes, as cruel as himself, who, like inhuman savages, destroyed all before them with fire and sword, involving cities, towns, and villages, with their inhabitants, in devouring flame, and cutting those in pieces with their battle-axes who attempted to escape from their burning homes. They carried their sack-ドラughts, of men, women, and children, made no impression on their unrelenting hearts; even the most tempting bribes, and the humbllest offers of becoming their slaves, had no effect. All the towns through which they passed, exhibited the most deplorable scenes of misery and despair. The villages were desolated, the inhabitants, their throats cut, the streets covered with the bodies of young men and children, without heads, and arms, and of ma

One Oliver, a famous pirate of those days, was much celebrated for humanity, and acquired the name of Baraknie, or child preserver, because he denied his followers the privilege of tossing infants on their spears. Even after the Danes and Anglo-Saxons had embraced Christianity, they long retained too great a tincture of their former ferocity. It is a sufficient proof of this, that when the oldest historian of our nation, and the author of the History of the North American savages, was occasionally performed by these nations on their enemies towards the latter end of this period. "Earl Godwin," says an ancient historian, "intercepted prince Alfred, the brother of Edward the Confessor, at Guildford, in his way to London, seized his person, and defied his guards, some of which he imprisoned, some he sold for slaves, some he blinded by cutting out their eyes, some he maimed by cutting off their hands and feet, some he tortured by cutting off the skin of their heads, and, by various torments, put about 600 men to death.

Intemperance and excess in eating and drinking were, of all others, the most prevalent vices of our Anglo-Saxon and Danish ancestors; in which they would have spent whole days and nights, without intermission, even after they were Christianized. This propensity showed itself at their religious festivals, for when the festival of St Augustine, the English apostle, was held by king Edmund I. with all his courtiers and nobility, they were all so intoxicated with liquor, that they behaved their sovereign butchered by a lawless ruffian, without having either strength or presence of mind to give him the least assistance. Some endeavours to check these shameful excesses were made by his successor, Edgar; and one of his regulations is so curious that it merits insertion. It was the custom in those days, that a whole company drank out of one large vessel, which was handed
ENGLAND. (ECCLESIASTICAL HISTORY.)

about from one to another, every one drinking as much as he thought proper. This custom occasioned frequent quarrels, some alleging that others drank a greater quantity of the liquor than their share, and, at other times, some of the company compelled others to drink more than they inclined. To prevent these quarrels, Edgar commanded the vessels to be made with knobs of brass, or some other metal, at certain points, and raised them all to the height of a person, under a certain penalty, should either drink himself, or compel another to drink more than from one of those knobs or pegs to another, at one draught.

The people of Germany and Scandinavia mark the greatest periods of their history by the different rites of burial which prevailed in these periods. In the most ancient period, they burned their dead, which was therefore called burna old, or the age of burning; in the succeeding period, they buried the dead without burning, and raised heaps of stones or earth over their bodies, which was therefore called old, or the age of hillocks. Though the end of the first and commencement of the second of these periods is not distinctly marked, yet it seems to have taken place before the arrival of the Saxons and Danes in Britain, who generally, if not always, buried their dead. They used to build a mound over the tomb, or to perpetuate their memory. When Hubba, a famous Danish chieftain, was slain by the English A.D. 878, his followers buried his body, and raised a great mound of earth over it, which they called Hubbastow, or the place of Hubba. Though it be now swept away by the sea, yet the place on the strand near Appledore in Devon, where once it stood, is still known by the name of Whibblestow. When they deposited the body in the ground, and began to cover it with earth, the whole company made the loudest and most bitter lamentations. The Anglo-Saxons were so much accustomed to lay the bodies of the dead on the surface of the ground, and cover them with stones and earth, that they even did this when they buried them in churches; and they became quite unfit for the celebration of divine service, and was forbidden to be done. The evidences of this practice were at last so great, that several canons were made against burying any in churches, except priests, or such as paid very well for that privilege; and obliging those that were buried in them to be deposited in graves of a proper depth under the pavement. Hence, in the latter part of their burial, was a continued scene of feasting, singing, dancing, and all kinds of gambols and diversions, at an enormous expense to the family of the deceased. Even some kept their dead so long unburied, that all the wealth left by the deceased was consumed in these games and feasting. This custom, though originating in paganism, and discouraged by the church, was yet too agreeable to their excessive fondness for feasting and riot, to be soon abandoned. The manner of preparing the body, and the funeral procession of the famous Wilfred, archbishop of York, who died at Oundle, in Northamptonshire, and was buried at Rippon, is thus described by his biographer, Eddius: "Many abbots and clergy met the conductor of the corpse of the holy bishop in a hearse, earnestly begging the privilege of washing the sacred body, and dressing it honourably, and they obtained the permission. Then one of the clergy, named Bacula, spreading his surplice on the ground, the brethren deposited the holy body upon it, washed it with their own hands, dressed it in the pontifical habits, and carried it towards the appointed place, singing psalms and hymns in the fear of God. Having advanced a little, they pitched a tent over it, bathed the corpse in pure water, dressed it in fine linen robes, placed it in the hearse, and proceeded, singing psalms, towards the monastery of Rippon. When they approached it, the whole monastic body, and the people in the town, fell to their knees, and, at other times, some of the company compelled others to drink more than they inclined. To prevent these quarrels, Edgar commanded the vessels to be made with knobs of brass, or some other metal, at certain points, and raised them all to the height of a person, under a certain penalty, should either drink himself, or compel another to drink more than from one of those knobs or pegs to another, at one draught.

Our Anglo-Saxon and Danish ancestors, while pagans, had their priests, bearing their idols, constantly attending the armies, exercising military discipline, and determining what was to be done in most proper seasons for giving battle. After their conversion to Christianity, they long retained these customs, a little changed and accommodated to their religion. Before a crew of Christian pirates set sail, on a plundering expedition, with the pious design of evidences, must be received with caution; for they never neglected to take the sacrament, to confess their sins to a priest, and to perform penances, in hopes that God would bless them, and prosper their design. The armies were always attended with a great number of ecclesiastics, to pray for their success; and among them, the most venerated were the holy relics, in order to procure the protection of those saints to whom they had belonged. It is impossible for us to fix, with precision, the commencement of Christianity in Britain. It has been conjectured that the light of the gospel may have reached Britain, by the way of France, before (as called Transalpine Gaul) before the conclusion of the first, or not long after the commencement of the second century. As no churches are recorded to have existed in France before the second century, one may wonder if the evidence is from the most venerated relics, in order to procure the protection of those saints to whom they had belonged. But of this we are certain, that it made considerable progress in our island, previous to the time of Constantine the great, so much praised by some, and abused by others. Constantine himself was a native of Britain, being born in that island, where Constantius Chlorus, his father, then emperor of the west, resided; and whom he succeeded in Britain. There can be no reasonable doubt, that when Christianity was established by Constantine within the ample range of the Roman empire, it would make more ample progress in this country than before that event. But we know very little about it till the rise of the Pelagian heresy, at the commencement of the 5th century. Pelagius, that noted heresiarch, was himself a native of Wales, and his real name was Morgan; and his conductor in spreading the heresy bears his name, was Celestius, a native of Ireland. Their peculiar opinions made considerable progress among the British Christians, as might reasonably have been expected: but were at length extinguished by the efforts of Germanus and his disciples. Several bishops, from Britain, sat in the famous council of Nicaea, A.D. 325, also in that of Sardis, 347; and of Ariminum, in Italy; and of Arles, in France; and, in A.D. 519, an ecclesiastical synod of all the British clergy was held by St David, archbishop of Canterbury, and uncle of the famous king Arthur, for expelling the remains, and preventing the practice of the Pelagian heresy. But, however flourishing and prosperous the state
of Christianity might have been in the time of Roman subjugation, it was doomed to suffer a total eclipse, nay, an almost utter extinction, by the arrival of the pagan Saxons. The period, when the innumerable hordes of Scythians, from every quarter, burst, with irresistible violence, upon the Roman empire; when "in the morning of the third century" the sky of the congregated host, gathering fresh terrors as it rolled along, obscured the sun of Italy, and sunk the western world in night," was peculiarly calamitous to Britain, by obliging the Romans to abandon the island.

Before the arrival of the Saxons, the northern parts of provincial Britain were quite depopulated, by the successful and oft repeated invasions of the Scots and Picts; and the Saxons completed the desolation. They murdered the Christian clergy, and destroyed the ir churches. Their pagan enmity was fostered and inflamed by their long and bloody contests with the Christian Britons. The desolation was so great, that more than half the population was swept away. While, in Scotland, there was not so much as one place that deserved the name of a city; only 28 towns remained in South Britain, where the Romans had built them (Edin., D. of York, London excepted) contained 10,000 inhabitants in the 7th century, and the greatest part a few hundreds only. "And at no time, from the Saxon heptarchy to the Norman conquest, did it," says Dr Henry, "contain above one million and a half of people.

It was not till A.D. 570, that the first rays of evangelical light dawned upon the Saxon conquerors of Britain, by means of a marriage alliance between one of their petty monarchs and the daughter of Cherebert, king of France, a princess warmly attached to Christianity. The famous Austin, the monk, was sent over, by pope Gregory, to attempt their conversion. He, with forty other monks, landed in England, and was kindly received by Ethelbert, who assigned Canterbury, as the place of their residence, to Austin and his companions. They entered it in solemn procession, carrying the picture of Christ before them, and a silver cross, singing a hymn. Their pious endeavours were crowned with such success, that, in a very short time, the king, and most of his subjects, were converted; and no fewer than 10,000 of them were baptized on Christmas day. Under the law of the papal court, more missionaries were sent to Austin, and a model for the government of the infant church, and a valuable library of books, vestments, sacred utensils, and holy relics. Austin's efforts, however, to reduce the Welsh Christians to dependence on the papal authority failed of success; and, in revenge, the ghostly abbot threatened them with the wrath of heaven and the hostilities of the English.

The East Saxons were soon after converted by Mellitus, and a bishop's see was established at London, their capital, A. D. 610. The Northumbrians were next converted; this was accelerated by the marriage of their king, Edwin, with Ethelburg, a daughter of Ethelbert, king of Kent. That princess having the free exercise of her religion secured to her and her household, was accompanied by Paulinus, a missionary, into her new dominions, whose labours were so successful, that Edwin, and his high priest, Coifi, a great many of the nobility, and great multitudes of the common people, renounced paganism, and were baptized; no fewer than 12,000 are said to have received the initiatory rite of baptism in one day. By the influence of Paulinus, his clergy, for the first time in the British Angles, and many of his subjects, were converted; and, as a reward to the services of Paulinus, Edwin erected a bishop's see at York, and even obtained an archbishop's pall for him from Pope Honorius. The Northumbrians, upon the defeat and death of Edwin, A. D. 638, apostatized, but were soon after reconverted by their king, Oswald, who had been instructed in the Christian religion, during his captivity in Scotland, by the Culdees. The East Angles, who had apostatized, were soon after reconverted by Berinus, who was greatly indebted for his success to the arrival of Oswald, the Northumbrian, at the court of Cynigiel, king of Wessex, A. D. 635, to marry that monarch's daughter; for, by Oswald's persuasion, not only the king, but also a great number of his subjects, embraced the Christian faith, and a bishop's see was founded at Dorchester, of which Berinus was the first bishop. The Mercians were converted about the middle of the seventh century. This was also brought about by a marriage alliance between the eldest son of the Mercian king, Offa, and an English princess, Northumberland, who, at his return home, carried with him four missionaries, who preached the gospel, such as it was, successfully in Mercia; and the last of these four, who was a Scotsman, was ordained the first bishop of the Mercians by bishop Finnian.

From the above, it appears, that the English, in the kingdoms of Kent and Wessex, were converted to, and instructed in the Christian faith by French and Romish missionaries, while the Mercians and Northumbrians received the light of the gospel from Scottish preachers; which circumstance gave rise to controversy among the ecclesiastics of the several nations, and the form of the ecclesiastical tonsure. The Romish missionaries, and their churches, kept Easter, on the first Sunday after the 14th, and before the 22d day of the first moon, after the vernal equinox; and those churches planted by the Scottish missionaries, kept that festival on the first Sunday after the 13th, and before the 21st day of the same moon. Therefore, when the 14th day of that moon happened to be a Sunday, those of the Scottish communion celebrated the Easter festival on that day, whereas those of the Romish communion did not celebrate it until the 22d day of the same month.

To promote the union of the English church with the church of Rome, a grand council was summoned, by Theodore of Tarsus, archbishop of Canterbury, to meet at Hertford, A. D. 673, at which he presided; and obtained their consent to a number of canons which he had brought from Rome, demanding a perfect uniformity among all the English churches. Besides this union among the English churches, and conformity to the Romish church, which was brought about by Theodore, several new doctrines and practices were introduced, that were formerly unknown amongst the English church. Amongst these, were enumerous extenuation of penance, or secret confession to a priest, as necessary to abolution, directly contrary to the doctrines of the Scot- tish missionaries, who taught, that confession to God was sufficient. Theodore, by his address, now obtained the recognition of the metropolitan power over all the English clergy; and exercised it, while he lived, with but little severity. He died in the 89th year of his age, and 23d of his pontificate.

In the course of the 7th century, many monasteries were founded in all parts of England. They were designed, at first, for the seats of bishops and their clergy, for the profession of the religious habit, and were preached and administered the sacrament over all the neighbouring country; and, in all places, they were seminaries of learning, for educating the youth. No
vows of celibacy or poverty were at first required of the priests inhabiting these monasteries; but they were afterwards relaxed by successive popes and metropolitan. The monasteries being richly endowed, drew such numbers to enjoy in them a lazy, comfortable life, that they soon became intolerable evils to the commonalty. The impious doctrine, broached about the end of the 7th century, that there was, as an essential part of the habit of a monk, all the sins of their youth were forgiven, induced many kings, queens, and nobles, to flock thither: it, in fact, proved the ruin of the Anglo-Saxons, and paved the way for the conquests of the Danes; who, finding the monasteries well stored with booty and provisions, plundered and destroyed them so effectually, that, before the end of the 9th century, there was hardly a monastery or monk left in England. But the converted Danes soon fell into the same error as their predecessors; and the rage for monasteries broke out anew in the 10th century.

An excessive veneration for relics became prevalent in England about the 7th century. Few Chris-
sians thought themselves safe from diabolical machinations, unless they carried a relic of some saint about with them; and no church could be dedicated without a relic of a saint either of the Empire, the Kings, princes, and wealthy prelates, purchased pieces of the cross, or whole legs and arms of apostles; while others were obliged to be contented with the toes and fingers of inferior saints. Agelnoth, archbishop of Canterbury, when he was at Rome, A.D. 1021, purchased from the pope an arm of St Augustine, bishop of Hippo, for 6000 lb. weight of silver, and sixty lb. weight of gold. Images, though used in churches at the very commencement of Christianity in England, were not worshipped till the middle of the 9th century. Transubstantiation was not yet at all the end of the 11th century, by the famous Lanfrane, archbishop of Canterbury, and the opponent of the great Berenger, the zealous and steady adversary of that most irrational doctrine. Masses were early introduced into England; and it was ordained by the canons of the council of Castle-Hythe, A.D. 816, that every bishop who should not hold the following offices to be performed, for the repose of his soul, viz. the tenth of all his property shall be given to the poor, that all his English slaves shall be set at liberty; that, at the sounding of the signal in the different parish churches, the people who were members of the church congregation and there say thirty psalms for the soul of the deceased; that every bishop and abbot shall cause six hundred psalms to be sung, and one hundred and twenty masses to be celebrated, and shall set at liberty three slaves, and give each of them three shillings; that all the servants of God shall fast one day; and that, for thirty days, immediately after service, in every church, seven bells of pater-nosters shall be sung for him. In return for the kindness of Ethelwulf, who gave a tenth part of all his own lands for the support of the clergy, it was ordained, that the clergy should meet with their people, every Wednesday, in the church, and there sing fifty psalms, and celebrate two masses, one for king Ethelwulf, and another for the nobility who had consented to this famous grant, which took place A.D. 857; and, by another canon, enacted A.D. 928, the clergy purchased and possessed freeholds for the king every Friday, in every monastery and cathedral church. In these times, public worship consisted chiefly in psalmody. In some churches and larger cathedrals, this exercise was continued day and night uninterruptedly, by a constant succession of psalm-singers. An humble and devout monastery was much in vogue, (says an ancient historian,) that it enticed great numbers to build and endow monasteries. The organ was introduced into churches in the course of the 9th century. This instrument was partly a succession of the good people of those times, almost entirely consisted in singing a prodigious number of psalms, as the most effectual way of appeasing the wrath of heaven, and atoning for their own sins, or those of their friends, either living or dead. It was an article in the profession of many associations called guilds, or fraternities, among the Anglo-Saxons, that each member should sing two psalms every day, one for the living members of the fraternity, another for all who had been members, but were dead; and that, at the death of a member, each surviving member should sing six psalms for the repose of his soul. Most of those who could afford the expense of learning music, either went to Rome, or sent their sons thither; and the clergyman who sung best, was accounted the most useful theologian. Penances were strictly enjoined by the canons of several successive councils, and their degrees determined with the greatest precision. Long fastings of several years were prescribed as the proper penances for many offences; but these fastings were not so formidable as they appeared at first sight, especially to the rich, as a year's fasting might be redeemed by thirty shilling, or in quantity of £4 10s. of our money, and in value to thirty pounds. A rich man, also, who had many friends and dependants, might despach a seven years' fast in three days, by procuring 840 men to fast for him three days, on bread and water and vegetables. This was called fasting in proxy. Pilgrimages were early introduced, and so frequent did they become, that the roads between England and Rome were so crowded with pilgrims, that the very tolls they paid were an important article of revenue to the princes whose terriory they traversed.

Books were so scarce in the end of the seventh century, that for one book, (a volume on cosmogrophy,) king Alfred gave an estate of eight hides, or as much land as eight horses could plough. At this rate, it was utterly impossible for the common people to have books; but a bishop, or a nobleman, who could, bought the following offices to be performed, for the repose of his soul, viz. the tenth of all his property shall be given to the poor, that all his English slaves shall be set at liberty; that, at the sounding of the signal in the different parish churches, the people who were members of the church congregation and there say thirty psalms for the soul of the deceased; that every bishop and abbot shall cause six hundred psalms to be sung, and one hundred and twenty masses to be celebrated, and shall set at liberty three slaves, and give each of them three shillings; that all the servants of God shall fast one day; and that, for thirty days, immediately after service, in every church, seven bells of pater-nosters shall be sung for him. In return for the kindness of Ethelwulf, who gave a tenth part of all his own lands for the support of the clergy, it was ordained, that the clergy should meet with their people, every Wednesday, in the church, and there sing fifty psalms, and celebrate two masses, one for king Ethelwulf, and another for the nobility who had consented to this famous grant, which took place A.D. 857; and, by another canon, enacted A.D. 928, the clergy purchased and possessed freeholds for the king every Friday, in every monastery and cathedral church. In these times, public worship consisted chiefly in psalmody. In some churches and larger cathedrals, this exercise was continued day and night uninterruptedly, by a constant succession of psalm-singers. An humble and devout monastery was much in vogue, (says an ancient historian,) that it enticed
literary subjects, and was possessed of all the learning of his time. His ecclesiastical history is the only performance that throws any light on the religious state of the country in the time preceding the Saxon conquests down to his own era.

About the same time flourished John Scotus Erigena, a native of Ayr, in Scotland, who was distinguished both as a philosopher and a theologian. This celebrated Scotman, abandoning his native creed and church, embattled with intestine commotions, travelled on the continent, as far as Greece (if some writers may be believed), and there acquired a knowledge of the Greek language and philosophy. "But in whatever way," says that learned and accurate German, Brucker, "he acquired the knowledge of languages and philosophy, it is certain, that he had, not only a very pleasant and facetious, but, also, a very acute and penetrating genius; that, in philosophy, he had no superior; and in languages, no equal, in the age in which he flourished." He was the favourite of Charles the Bald, king of France, against his brother (Alfred's biographer) at marches in that age. His philosophical tenets bear some resemblance to the Pantheism of the celebrated atheist, Spinoza. He delighted in paradoxes, or seeming contradictions; and appears to have held, that the universe and all the things-comprehended in it, were not, in a visible manner, the handiwork of God, but eternal, and that he was removed from him by eternity, and shall, at the consummation of all things, be resolved again into him, as their great fountain and origin. He was the father of the Scholastic Theology, which flourished so long in the Christian church. At the request of Charles, he published a treatise upon the eucharist, against Paschalinus Radburtus, the first who advanced the absurd ideas of transubstantiation, and the corporeal presence of Christ in the sacrament. This book of Scotus, in answer to Radburtus, has perished; but his doctrine, concerning the eucharist, was the same with that of the Reformed churches. He was also engaged in the Predestinarian controversy, raised by the famous Gotteschalk; and wrote against that persecuted and unhappy monk. Alcuin, the preceptor of Charles the Great, was another of the learned men who flourished at the latter end of the eighth century.

Cædwalla was the most learned prince in Europe; and made every effort to introduce literature and the sciences among his subjects; but his laudable intentions were greatly impeded by the infamous nature of the times, being engaged almost all his reign with the warlike, powerful, and ferocious Danes. Alfred erected the university of Oxford, A. D. 886. According to Camden, the first readers there, and regents in divinity, were "St Neot, an abbot, and eminent professor of theology; and St Grimbald, an eloquent and persuasive interpreter of the Holy Scriptures. Grammar and rhetoric were taught by a professor. Alfred, who dedicated one-eighth part of his revenues for the support of the masters and schools in Oxford, and the other schools which he erected for instructing his illiterate subjects; and he made a law, obliging all freeholders, who possessed two hides of land, or upon the overseers of each parish, and gave them a liberal education." And, by his continued and unremitting efforts to introduce learning, he succeeded so effectually that, before the end of his illustrious reign, he could boast that all his bishops' sees were filled with learned prelates, and every pulpit with a good preacher.

But this bright gleam did not last long. The success of the English conquests on the Danes, reduced the country to its former condition of turbulence. Ælfric, who was archbishop of Canterbury, from A. D. 995, to A. D. 1000, was one of the most learned and voluminous writers of the age in which he lived. This prelate, conscious of the incapacity of the bulk of the clergy, endeavoured to cheer them with the percepts of religion, translated no fewer than eighty sermons, (188 says Mosheim,) or homilies, out of the Latin into the Saxon language, for their use.

He also published a grammar and dictionary, and an Anglo-Saxon translation of the first books of the sacred Scriptures, an ecclesiastical history, &c., and a book of canons and rules for the government of the English church.

The clergy, by their successive encroachments upon the liberties of the people, and the rights of the sovereign, had attained to such a height of spiritual and temporal power, as to form an imperium in imperio, particularly after the Saxon Norman conquest. Gregory VII., who filled the papal throne, A. D. 1073, was the most audacious, and ambitious, the most able and arrogant pontiff that ever sat in the chair of St Peter. Having wrested the right of supremacy and vocation from every Christian prince, he imposed the following oath upon every bishop at his inauguration, to the temporal and spiritual authority of himself and successors: viz. "The rights, privileges, and authority of the holy Roman church, and of our lord the pope, and his successors, I will be careful to defend, enlarge, and promote; all heretics, schismatics, and rebels against our said lord and his successors, I will to the utmost of my power, persecute and impugn." From this time, the bishops became the spies and sentinels of Rome; and, in order to insulate their affections, to detach them from the state to which they belonged, and to engage them thoroughly in the interest of the holy see, celibacy was strictly enjoined. William the conqueror, to whom a circular letter was sent by Gregory, demanding an annual tribute, boldly resisted this claim; and asserted his right as an independent sovereign, denying that his kingdom was a fief of the holy see, but agreed to pay the tax of Peter's pence. This was a tax of a penny on each house, first granted by Inna, king of Wessex, in A. D. 725, for the establishment of an English college at Rome; and afterwards extended by Olaf, king of Mercia and East Anglia, in A. D. 794, over all his dominions. In process of time, it became a standing and general tax over all England; and, though at first it was applied to the support of the English college at Rome, the popes found means to appropriate it to themselves. It was confirmed by the laws of Canute, Edward the Confessor, William of Normandy, &c., and was not totally abolished till the reign of Henry VIII.

In the reign of Henry II. the power of the clergy had arrived to a stupendous height. The ecclesiastical courts having separated from the civil, had become not only terrible to persons of all ranks, by their interdicts, excommunications, and other censures: but, in consequence of their separate jurisdiction, to which they pretended they were alone responsible, had emancipated themselves from all subjection to civil authority. To put a stop to these evils, and reduce the clergy to the rank of subjects, Henry, in a great council, A. D. 1104, enacted the famous canons of Clarendon, by one of which, all clergymen accused of crime, were to be tried by the civil courts, and, when convicted, not to be protected from punishment by the church; but this, and the other canons, as they
struck at the absolute independence of the clergy on the civil powers, were strenuously opposed by the clergy, headed by the famous Becket, archbishop of Canterbury, who pleaded, that they were subject only to the laws of the church, to be judged only in spiritual courts, and to be punished only by ecclesiastical censures. Henry made various attempts to obtain the papal sanction to these constitutions, but in vain. Becket had reluctantly sworn obedience and assent to them; but the pope sent him a dispensation, freeing him from his oath, and enjoining him to perform the duties of his sacred office. Becket having obtained this dispensation, opposed these constitutions, and protected the clergy from the punishments they deserved, in spite of Henry; and having taken a solemn protest, and appealed to the pope, he, shortly after, left the kingdom and went to Rome; which obliged the king to send an embassy to counteract Becket's influence at the papal court.

After various attempts, made by Henry, to soften the archbishop, and to induce him to comply with some kind of subjection to civil authority, he was compelled to give way to the pertinacious firmness of Becket, supported by the thunders of the Vatican, and he had to receive that dispensation upon his own terms; who, as soon as he returned, behaved with such insolence, excommunicating all the superior clergy of the kingdom, who were willing, in some small degree, to comply with the regulations of Clarendon, that these last, throwing themselves at the royal feet, implored protection from the wrath of Becket, in such strong terms, that, at last, the king, in a violent burst of passion, exclaimed, "What an unhappy prince am I, who have not about me one man of spirit enough to rid me of this insolent prelate?" This passionate exclamation made so deep an impression on those whom he heard it, that four barons immediately resolved either to terrify the prelate into submission, or to put him to death. To prevent any suspicion of their design, they left the court at different times, and arrived at Canterbury, with a chosen band of determined men, with arms concealed under their clothes, who were posted in different parts of the city, to prevent interruption from the citizens. The four barons, attended by twelve of their company, went unarmed to the archiepiscopal palace, and were admitted into an apartment, where the archbishop sat, conversing with some of his clergy, and to this they made an estrangement, which was either to make satisfaction to the king, as they were willing to absolve the prelates whom he had excommunicated, or suffer death. Becket remained undaunted in his refusal, upon which the barons retired, when his friends earnestly pressed him to make his escape, which he refused to do. The barons, with their accomplices, finding that threats and intercessions were equally vain, put on their coats of mail, and each, armed with a sword and axe, returned to the palace, but found the gate shut. When they were preparing to break it open, they were conducted up a back way, and were let in at a window by Robert de Broc. A cry then arose, "they are armed, they are armed;" and Becket was hurried into the church by his clergy, hoping that the sacredness of the place would protect him from violence. The conspirators having searched the palace, came to the church; and one of them crying "where is that traitor where is the archbishop?" "Here I am, an archbishop, but no traitor:" "Fly, or you are a dead man," said one of the conspirators; "I will never fly," replied Becket. One of the conspirators then took hold of his robe, saying, "You may impose a sentence along with me." But Becket, taking him by the collar, shook him so violently, that he almost threw him down. Enraged at this resistance, the baron aimed a blow with his sword, and cut off the arm of an attendant priest, and slightly wounded the prelate on the head. By three other blows, received from the three other barons, his skull was almost cloven in two, and his brains scattered about the pavement of the church; and the assassins, led by Thomas Becket, December 29th, A.D. 1170, the great champion of the independence of the clergy upon civil authority; and who endeavoured to subject his king and country to a foreign jurisdiction.

None expressed greater grief at the tragic end of the prelate than himself. He refused to see any company, take any food, or admit of any consolation for three days. He also drew up a full and pathetic narrative of the case, transmitting it to the pope, conjuring him to suspend censure, till he had inquired into the truth, and, at the same time, most solemnly protesting his innocence. Every method was taken to soothe the pope, and ward off the dreadful sentence of excommunication; which, in these days, would have entirely ruined Henry's affairs. At last, after a long and expensive negotiation, he got matters made up with the papal court, by solemnly disavowing on the gospels, in presence of the pope's legates, and in the presence of himself, his prelates, nobles, and others, in the church of St Andrew, that he had neither commanded nor desired the death of the archbishop of Canterbury; and that when he had heard of it, he was very much grieved. In order to atone for his offence, and to procure full reconciliation with the church, he bound himself to give to the knights templars as much money as would pay two hundred knights for one year, to serve in the Holy Land; and, at next Christmas, to take the cross, and go in person into the Holy Land the following summer, unless he obtained a dispensation from the pope; to permit arms to be made to the pope, in good faith, and without fraud; to abolish such evil customs as had been introduced in his own time, (the Clarendon constitutions); to restore all the possessions of the church of Canterbury, and of all the clergy and laymen, who had been deprived of their estates on account of Becket; and to this, a condition was added, a secret one, of doing penance at the tomb of Becket, which Henry, after his arrival from France, performed in the following manner: "Leaving Southampton, he took the road to Canterbury; and was no sooner in sight of that city, than alighting from his horse, though yet at the league's distance, stripped his insensible mail, and toed the holy tomb; where, after he had taken a little rest, he submitted to be scourged on the bare back with forty stripes, by the prior and the monks of St Augustine; after which, he passed the night in prayer, lying on the pavement of the church; and next morning, after having attended a procession round the holy tomb, he set out for London."

As Becket had fallen in defence of clerical immunity from civil jurisdiction, his memory could not fail to be revered by all his spiritual brethren; and he was, accordingly, canonized, and his relics preserved in a silver shrine at Canterbury, which, as usual, were endowed with miraculous powers; and his intercessions were supposed to be more efficacious than those of all the other saints, whose names are enrolled in the Roman calendar. Chaucer's Canterbury Tales sufficiently declare the popularity, in these days, of pilgrimages to Becket's tomb.

The rage for crusading had, for a century, been fanned into flame by ambitious pontiffs; and was incalculably detrimental to the civil interests of mankind, and the cause of religion. By these, Europe was deprived of a vast number of its inhabitants.
Immensely large sums of money were exported into Asia, for the support of this holy war, as it was then denominat
and numbers of the most powerful families became involved in the war; the Christian captains were involved in great poverty and misery. Among those princes who were seized with the mania of crusading, Richard Cœur de Lion, who succeeded his father, Henry II., bore a principal figure. Stimulated by the news of the deplorable state of the Christians, reduced to the greatest extremities, by the victorious arms of the great Saladin, and ambitious to enter the lists with such a renowned warrior, and thereby celebrate his name, both as a saint and a hero, he assumed the cross. He took, out of his father's treasures, no less a sum than 2,900,000 in gold and silver, besides plate, jewels; and precious stones. To this he added immense sums, by the sale of the royal castles, manors, parks, woods, and forests. All this money, greater in quantity than had ever been amassed by any former king of England, was dissipated in this chivalrous expedition. Richard set out on his voyage for the Holy Land, attended by a numerous fleet and army, Dec. 11th, A. D. 1190. Many of the English, who had assumed the cross, and were preparing for their intended expedition, imagined that nothing could render the Delity more propitious to their enterprise, than to murder all the Jews they could meet, and seize their property. But this fearful and inhuman policy did not succeed in their interests zeal, many thousands of that unhappy race were inhumanly butchered in cold blood, at Norwich, Stamford, York, and other places; and these pious murderers escaped the punishment due to their atrocity, by hastily embarking in the fleet. Richard, after a long and stormy passage, in which he lost part of his fleet, at last arrived in the neighbourhood of Acre; (the ancient Acco of the Philistines, and the Ptolemis of ecclesiastical antiquity), which, for two whole years had been invested by the Christians, and had made a most gallant and successful defence. On the arrival of Richard and his valorous host, the siege, which had languished for some time, was pushed with the greatest vigour. The walls were battered night and day, with various machines, the artillery of those times; frequent furious assaults were given; and the besieged, despairing of relief, capitulated; (according to the former custom of the English army, on the following terms: "That the garrison should be allowed to march out, only in their shirts, leaving their arms and baggage behind them—that Saladin should restore the true cross, with 2,500 of his Christian prisoners of the greatest note—the keys of the city to the king (Richard, and Philip of France), 200,000 pieces of gold, called Byzantines, for his men, whom they had taken prisoners; and that the whole garrison should be detained as hostages, till these conditions were fulfilled." Thus ended the famous siege recorded in history, whether we consider the length of time, the great expense of the enterprise, three years, three months, and nine days. The sum raised and paid for his ransom amounted to a million and a half pounds of our money.

Notwithstanding all the calamities which Europe in general, and England, in particular, had suffered, by successive crusades against the infidels, pope Innocent set another on foot. He issued a bull, Dec. 27th, A.D. 1199, directed to all the prelates of the West Continent, named by the popes, and all their clergy, by the authority of the apostolic see—of Almighty God—and of the Holy Ghost, and under the penalty of eternal damnation, to pay the fortieth part of all their revenues, for defraying the expenses of this expedition; which was to be commanded by two cardinals, named by the popes, and all their clergy.

This papal tax was collected in England; and the money was carried to Rome by Philip, a Romish notary. John, who succeeded Richard, A.D. 1199, instead of resenting the insult to his rights, as an independent prince, by a foreign power imposing a tax on his own subjects, without his consent, was so weak as to grant a fortieth part of his revenues to the pope, and exhorted his barons to do the same. At the same time that this tax was imposed on the clergy, for the purpose of defraying the expense of the intended crusade, emissaries were sent by the pope into all countries, and particularly into England, to exhort the laity to take the cross. By these means, a great army was raised, and, conducted by the councils of the pope, was not at all employed in rescuing the Holy Land from the hands of the infidels, but in destroying the Christian empire. It was not intended to make a Greek and not a Roman Christian.

Few events were more to be dreaded by an English sovereign, at that period, than avacation in the see of Canterbury, as it was commonly productive of violent contests both at home and with the court of Rome. But the death of Hubert, archbishop of Canterbury, which happened A. D. 1205, was productive of more fatal consequences to regal authority, than any which had taken place, and raised papal influence to a plenteous of power hitherto unknown in England. The Canterburian monks had long claimed a right to elect their archbishops; but this right had always been opposed by the kings of England, and the prelates of the province. The monks determined, on this occasion, to anticipate their competitors, by a secret and sudden choice, before the vacancy could be generally known; and, therefore, on the day on which the papal legate, dying of old age and weariness, the King, on the fortieth part of his property, without the consent of the monks; and, at the same time, obliged him to swear that he would not divulge his election without their consent; and sent him off immediately, with some of their own number, to Rome, to keep a watch on the person of the pope. But, by the imprudence of the newly-elected archbishop, in letting out the secret, defeat the whole plan; and his electors were so disconsolate at his foolish conduct, that they annulled his election, and chose another, with consent of the king, who immediately put him in possession of the see; and some of the monks were sent to Rome to obtain the consent of the pope. This affair, rendered sufficiently embarrassing by this double election, was made still more so, by a solemn protest, taken by the bishops, who had never been consulted in either of the elections; and who also sent their protest to Rome to prevent the consent of the pope to both claims. Nothing could be more agreeable to the court of Rome, than the appearance of so many parties, and so many opposing claims. After vast sums of money had been spent by all the parties, and a whole year spent in examining the evidence, the pope, after depriving the bishops of their right of election, restricting it to the monks, setting aside both the candidates, and declaring Stephen Langton, a creature of the pope's, archbishop of Canterbury. This raised a dispute between the king and pope Immor
In the mean time, the French king was appointed by the pope to carry his sentence of deposition into effect; and was informed by the papal legates that he was to prepare for himself, his sons, and the kingdom for his return. This was to obviate the temptation which he, in common with other princes, who reigned at that period, was unable to resist. He raised a mighty army, and collected a great fleet, to take possession of England; in consequence of which he was compelled to withdraw his forces, and thereby acknowledged the right of the pope to dispose of crowns and kingdoms at his pleasure. John, informed of these transactions on the continent, made the most vigorous efforts to oppose the invasion. But all these preparations, on both sides, served only to promote the purposes of Innocent; for, as soon as John was sufficiently terrified by his dread of the French army, and his suspicions of his own subjects, to induce him meanly to surrender his crown and kingdom to the pope, Philip was compelled to abandon his enterprise against England, to avoid the thunders of the Vatican, the dreadful effects of which he had before his eyes. John, having made an unlimited submission to the pope, by agreeing to receive Langton, the archbishop appointed by Innocent, with all the clergy who had adhered to him, into favour, and to repair all their losses, and pay all the expenses they had incurred during this long contested dispute, was at last received with all possible holiness; and, to give an effectual check to Philip, of whose power Innocent began to be afraid, John agreed to resign his kingdom into the hands of his holiness, and consented to hold his power under him, paying a tribute of 700 marks for England, and 400 for Ireland. This ignominious treaty was carried into effect at Dover, May 15th, A.D. 1213; and continued in force till the reign of Edward III., a period of 150 years. Thus, England and Ireland were no longer one independent monarchy, but fiefs of the holy see, and their kings its humble vassals.

In the long interval between the Norman conquest and the era of the reformation, a period of nearly 500 years, very few ecclesiastics occur worthy the attention of the historian, as any way remarkable for genius or learning. Thomas Bradwardine, archbishop of Canterbury, was one. This learned and pious person was born about the middle of the reign of Edward I.; he studied at Oxford, and was one of the proctors of that university, in A.D. 1325. He was the greatest mathematician and theologian of his day. He was confessor to Edward III. and attended him in his French wars: he was chosen archbishop of Canterbury, but Edward refused to part with him; however, soon after, being chosen for a second time, Edward consented to the election. He did not long survive his consecration, but died seven days after his arrival at Lambeth palace. It is only from his great work, entitled, The Cause of God Asserted against the Hereticks, that we are able to form a proper estimate of the piety, the deep humility, the metaphysical acumen, and argumentative genius of the man. John Wickliff, rector of Lutterworth, was another eminent precursor of the reformation; and contributed, by his life and writings, to pave the way for that great event, by the translation of the Scriptures into English. While divinity professor at Oxford, he published certain conclusions against transubstantiation, the pope’s infallibility; denied that the church of Rome was the head of the other churches, that St. Peter had the power of the keys any more than any other of his apostles, and that the New Testament, or gospel, was a perfect rule of life and manners, and ought to be read to the people; that there were only two orders of spiritual rulers, viz., bishops and deacons; that all human traditions are superfluous and sinful; that religious ceremonies are
married to Henry, and the succession to the crown settled upon the heirs of her body by act of parliament, in spite of all the remonstrances of the pope. Wolsey being suspected of insincerity in the affair of the divorce, was disgraced, and stripped of all his power, wealth and honour. John, duke of Lancaster, though his books were burned, and himself deprived of his professorship, got leave tocdn his days in peace, at his rectory of Lutterworth. He wrote about two hundred volumes, all of which were called in, condemned, and ordered to be burned, together with all his books, by the Act of Constance, which was passed in 1426, nearly forty-one years after his death. But his doctrine remained; and his disciples, called Lollards, a nickname, as Mosheim observes, generally affixed to pious persons in these times, by their adversaries, as Pietists, Puritans, and Methodists in after times, increased after his death; although several sanguinary laws were passed against them, by several successive parliaments; and many, at different intervals, were committed to the flames.

The pillars of papal despotism were shaken in England by his hand. He attempted the wrath of Henry VIII. against the pope, for refusing to sanction a divorce between him and his queen. Educated in all the superstitions of an idolatrous communion, and possessed of more literature than most of the princes in his day, Henry employed his royal pen to arrest, if possible, the progress of the Reformation. This, and the performance, lauded by a servile priesthood, and presented to his holiness, received the papal benediction; and Henry, in reward of his pious attempt, was dignified with the title of defender of the faith. Cardinal Wolsey, his favourite, was invested by the pope with legatine authority, which, combined with the absolute disposal of all ecclesiastical benefices within the gift of the crown, and a visitatorial power over all clergy, colleges, and monasteries, exempt or not exempt, rendered him the existing soveraign of the English church; and, therefore, from such a monarch as Henry, as a minister as Wolsey, neither a reformation of religion, nor a separation from Rome, could be expected. But what human wisdom could not foresee, and what human power could not effect, was accomplished by Him who has the hearts of men to do his pleasure. He overthrew the man, who had taken his queen, with whom he had cohabited nearly twenty years, or whether from scruples of conscience about his supposed incestuous connexion, because he had married his brother's wife, and the aspersions of illegitimacy cast upon his daughter by some foreign prince, separated from his wife's bed, and applied to the pope for a divorce. This circumstance perplexed the pontiff, who, from fear of offending the emperor, Charles V., nephew to Henry's hated spouse, was compelled to steer a middle course, and keep the matter as long as possible in suspense. But Henry, impatient of delay, and irritated at the procrastinating conduct of pope Clement, appealed to the principal continental universities, and desired their opinions upon the two following queries, viz., first, Whether it was agreeable to the law of God for a man to marry his brother's wife? and, secondly, Whether the pope could impose, or the law of God? From all the universities of Europe, and most of the continental literati, whether Lutherans or Papists, those of Rome excepted, he received an answer congenial to his wishes, which was afterwards confirmed by parliament, and the clergy in convocation assembled. This happy expedient was suggested by the famous Cranmer, a secret friend and convert to the opinions of Luther; and eased the real or pretended scruples of the monarch. Catherine was, accordingly, divorced from the royal bed; and Anne Boleyn, a friend to the Reformation, was publicly
Jerusalem, were suppressed, and, to complete the business, the parliament granted to the king the revenues of the two universities, and all the chanoines, free chapels, and hospitals, in the Kingdom.

Henry had now laid waste the temporal heritage of that church of which he had made himself the head. It is estimated, that the religious establishments suppressed by him must have amounted to above £273,000 sterling yearly revenue, yielded, at a moderate computation, without the least expense, above £5,000,000 per annum. The abbey of St Alban, (the British primate,) which was valued at £25,500 yearly revenue, possessed estates which, a century afterwards, yielded £32,000 annually. Many schemes were proposed to render the acquisition of such immense property useful to the community and the nation, by founding seminaries for the study of the law, for the acquisition of useful languages, and the education of those intended for diplomatic offices and high situations under government. But Henry had anything at heart but the education of his subjects; and the power of the church and the general instruction has ever yet been established in England.

The monasteries were the great asylum, and only support, of the indigent; and these last had been vastly increased by the recent abolition of the feudal system by Henry's father, a system at all events indispensably necessary to the support of the royal family, and the stability of the throne. Before that time, a very great proportion of the population lived in a state of vassal dependence upon the great barons, and held their small possessions by military tenure. By the bounty of their chiefs they were supported, at their hospitable halls they were fed, and about their persons they were retained. The great earl of Warwick, the last of the powerful barons, and commonly denominated the king-maker, had no less than 30,000 of these retainers, who daily fed at his table. But this system of vassalage being dissolved by Henry VII., thousands were thrown into absolute indigence; and but for the support which they received from the monasteries, abbeys, and hospitals in the kingdom, would have died of extreme want. On the suppression of the religious houses, the country was over-run with vagrants, who subsisted by begging, or robbing and plundering of the soil, in woods, or on the highways; and no less than 73,000 persons were actually invested and executed in the reign of Henry VIII. To prevent, indeed, if possible, the persons, supported formerly by the monasteries, &c., from being thrown upon the public, large quantities of church lands had been sold, at easy rates, to enable the purchasers to keep up the wonted hospitality; and, to enforce this duty, a penalty of £6 13s. 4d. per month, was imposed on the violators of this engagement; but the measure failed, and another attempt was made, in 1536, to lay the burden upon the parochial clergy, every parish priest being obliged to devote a large portion of his income for repairing the church, and supporting the poor. But this plan also proved abortive; and it was at last judged proper to compel the parish where the poor were born to support them; which was done in the reign of queen Elizabeth, and continued to be the law of the land until the year 1834, when some material alterations on the Poor Laws were effected by the Whig ministry. Whatever may have been the corruptions that attached themselves to the administration, and in some measure it is to be regretted, that, in the changes that have been made, the barbarous doctrines of Malthus are almost exclusively acted upon, and the vested rights of the poor to parochial relief are little recognized.

The separation of the English church from that of Rome, contributed but little to its reformation; but the progress of knowledge abroad, with the number of books published, some of which found their way into this country, and were translated, revised learning, and raised the character of the clergy both at home and abroad. But it was impossible to stop popular curiosity once excited; for, though the bishops bought up, and burnt, all the copies of Tyndal's Testament, that they could find, yet they were reprinted abroad, and sent over to merchants in London, who privately dispersed them among their acquaintance and friends. At last, the conviction decreed to have the Bible translated into English, and printed for common use, and set up in churches. This translation made its appearance in 1538; and Cromwell procured a warrant from the king authorizing all his subjects to read it. Upon notice of the university of Oxford, that a dangerous opinion was spreading, forbade all preaching, till he himself should set forth certain articles of faith to be believed by all his subjects, which were accordingly framed by himself, and ratified by a number of the clergy. By these, the Scriptures and the ancient creeds were made the standards of faith. They rejected the doctrine of transubstantiation, and the worshipping of saints and images, still remained. For this daring infringement of papal prerogative, Henry was excommunicated by his rival the pope; which produced no other effect, but to make him again require his subjects to swear allegiance to him as supreme head of the church; and to execute several refractory priests.

The sole right of reforming the church was now vested in the crown; and, in case of the king being a minor, in the council. Edward, Henry's son, succeeded; and a bright sun dawned upon the Reformation. As Edward was a minor, the government was under the management of a council appointed by the late king; in which his brother the Duke of York was the predominating member. The severities of the late reign were immediately relaxed, the persecution was stopt, and several refugees, as Coverdale, Hooper, and Rogers, (the proto-martyrs in Mary's reign,) and many others, were recalled home; and the reformers, freed from their dependence on the late king, preached fully and freely against Popery.

In 1555, the common prayer book was revised and reduced to its present form; and a book of articles of faith for the church of England, about forty-two in number, were drawn up by Cranmer and Ridley, and sent to the other bishops for corruptions and amendments, and being again reviewed by Cranmer, who gave them the finishing touch, they were presented to the council, and received the royal signature. They are the same in substance with the present articles, being reduced to thirty-nine in the beginning of Edward's reign. See the section Church for a summary of their principles.

The Reformation did not advance farther, being left in an imperfect state by the death of king Edward, who died at the age of sixteen, in 1553, and was succeeded by Mary, the daughter of Henry's first queen; which put a total stop to the growth of Protestantism for some years. In her short reign of five years, no less than 277 Protestants suffered at the stake, comprising five bishops, among others Cranmer, twenty-one monks, eight gentlemen,
eighty-four tradesmen, a hundred husbandmen, labourers, and servants, fifty-five women, and four children; fifty-four more were under persecution, seven of whom were whit, and sixteen perished in prison, the rest were delivered by the happy circumstance of being in Gloucestershire, Wiltshire, and other counties, which, though consisting only of the substructure of such buildings, in many instances have been so perfect as to indicate the plan and arrangement of the several apartments, which have frequently been found decorated with beautiful pavements, despite the protean decay, as those at Woodechester, near Stroudwater, of which most splendid engravings, with descriptions, were published by Samuel Lysons, F. S. A. The great Roman roads are among the characteristic works of the conquerors of Britain. They were admirably constructed with vast labour, by the soldiers, as appears from ancient inscriptions still existing. Antiquaries have traced the course and direction of most of them, as they extended in nearly straight lines between the stations with which they were connected; and portions of them are in several places yet discernible. The principal was the Watling Street, from Richborough through London to Holyhead; Icknield Street, or the road of the Iceni, from Yarmouth, in Norfolk, to the Land's End; Rykfielfield Street, from Tumouth to St. David's; Ermin Street, from Pevensey to Berwick-on-Tweed; Akeman Street, from the eastern side of England to St. David's; and the Foss-way, from Lincoln to Bath. The British Roman towns or stations were about ninety-two, among the more remarkable of which were Rutupiae, Richborough; Portus Dubris, Dover; Durovernum, Canterbury; Durobrivis, Rochester; Londinium, London; Verulamium, St. Albans; Durnovaria, Dorchester (Dorset); Isca Damaniorum, Exeter; Camulodunum, Colchester; Verulamium, near St. Alban's; Aqua Solis, Bath; Glevum, Gloucester; Corinium, Cirencester; Sorbiodunum, Old Sarum; Cunetio, near Marlborough; Calleva, probably Silchester; Hatis or Ragn, Leicester; Deva, Chester; Lindum Colonia, Lincoln; Eboracum, York, and Luguvallium, Carlisle.

Attempts have been made by some writers to discriminate between the style of building in use among the Anglo-Saxons and those adopted by their successors, the Danes and Normans. The remains of existing edifices, the erection of which can with probability be referred to the Saxon period of our annals, most of the royal and baronial castles and the great conventual and cathedral churches having been founded or rebuilt subsequently to the Norman Conquest. Conisbrough Castle, in Yorkshire, however, appears to retain some portions of Saxon architecture, as do others also in ruins; and there are a few churches in the midland counties, particularly those of Earl's Barton and Brixworth, in Northamptonshire, and Barton-on-the-Humber, in Lincolnshire, distinguished by some peculiarities of style which are not found in existing edifices; the erection of which can with probability be referred to the Saxon period of our annals.

Numerous Norman buildings, castellated and ecclesiastical, especially the latter, are found in various parts of England, the discriminating features of which are the pointed arch, cut-off square mouldings, as at Rochester Castle, St. Botolph's Priory, Colchester, the parish churches of Frensham, in Kent, Okeford, South Cerney, and others in Gloucestershire, parts of the cathedrals of Rochester, Canterbury, and Lincoln, and the White Tower, the oldest portion of the Tower of London. At the middle of the twelfth century, a new style of building began to be adopted in England, called the Gothic or pointed style, the windows, doorways, and other openings being formed with pointed, instead of round-
headed arches. This style received successive improvements and alterations, between the reigns of Henry II. and Edward VI., whence the buildings then erected have been classified as examples of the Early English style, of the Decorated style, of the Perpendicular style, or the Perpendicular Pointed style. Of the first kind is Salisbury cathedral, erected about 1220; of the second, the nave of Winchester cathedral, and the choir of that of Gloucester; and of the third, Henry the Seventh's chapel, Westminster.

But a great many ancient churches exhibit a variety of styles, and some every style in use since the Norman Conquest, owing to alternation, addition, or partial re-erection at different periods. The castles founded between the twelfth and fifteenth centuries are, in general, in a state of ruin and decay, except those which, like Norwich castle, have been subjected to the restorative skill and taste of modern architects. Some ideas of the state of secular architecture at different periods, while the Pointed style prevailed, may be furnished from the statement that old London bridge, now pulled down, was begun in 1173 and finished in 1199; and the hall in Westminster, erected in the reign of Richard II.; Windsor castle was the work of the celebrated William of Wykelham, bishop of Winchester, who died in 1403; his successor, Waynfleet, built Magdalen college, Oxford; and cardinal Wolsey that of Christchurch. After the fall of the former Roman republics, and during the long reign of Elizabeth, a mixed kind of architecture prevailed, which has been called the Elizabethan style, many specimens of which remain in old country mansions. Under James I., Inigo Jones reformed the national taste, and introduced the classic orders, as displayed in the works of Palladio and other Italian architects; and among his productions may be mentioned, the Banqueting House, Whitehall; the Surgeon's college, Lincoln's Inn Fields; St Paul's church, Covent Garden (the present edifice being an exact model of the original, which was destroyed by fire); and the older part of Charlton House, in North Wiltshire, belonging to the earl of Suffolk. Our next great architect was Sir Christopher Wren, who left a noble monument of his genius in St Paul's cathedral, London; and his works, and those of his disciples and imitators, are numerous, especially in the metropolis. Thames's castle, and the royal palace at Greenwich, built during the reign of George II., the gift of the nation to the great duke of Marlborough. Towards the close of the last century, a taste for Gothic architecture revived in this country, as displayed in the productions of James Wyatt; but his efforts, whether directed to the restoration of ancient buildings, as at Windsor castle, or to the execution of new designs, like Fonthill abbey, have been surpassed by later, and especially by living artists. The edifices of a country, whether public or private, detached and insulated, or collected in towns and cities, are, alike indicate the relative state of society in which they were erected. England, at former periods, has been divided among petty sovereigns, exposed to the incursions of maritime foes and hostile neighbours, or subjected to the violence and rapine of domestic warfare; hence, strength and security were the principal requisites of our ancient architecture. Even the votaries of religion were not exempt from danger; therefore, in the middle ages, every monastery was a fortress; and several churches in the counties adjoining Scotland were obviously designed as places of refuge from the marauding borderers. Thus, Henry VIII., in waging war against the kingdoms of France and Scotland, occupied monastic castles, with their military retainers, and the armed citizens and burgesses occupied walled towns, to which the inhabitants of the open country also occasionally retreated. The state of comparative confidence and tranquillity happily subsisting in modern times, has shown itself in the destruction or dislappendry and decay of castles and city-walls, except a few of the former, preserved as memorials of antiquity, or converted into jails for the custody of offenders against the law; but the buildings of the principal cities and towns, as London, Oxford, Bath, Bristol, Cheltenham, Brighton, Liverpool, and Manchester, with the country seats and mansions belonging to persons of rank and property, rival, in elegance, and magnificence, those of any other part of Europe; whilst the inhabitants of the less elevated orders of the people display a degree of neatness and convenience hardly to be found elsewhere.

Topography.—The territorial divisions of England have been extremely different at different periods; and it is impossible to trace with accuracy the correspondence between the limits of the various districts into which the country was divided under successive national governments. Instead therefore of attempting a complete enumeration of the British tribes, and a description of the boundaries of their respective domains, we shall describe the general situation of the Roman, and the provincial divisions of the island after it was subjugated by the Romans, noticing the aboriginal nations mentioned by ancient geographers; and then proceed to state the existing arrangements of counties and circuits, which probably originated with the Anglo-Saxons. The earliest formed Roman province in Britain was called Britannia Prima, including the whole territory south of the Thames from Kent to Cornwall. Within it dwelt the British nations denominated Cantii, Bilbroci, Atrebates, Segontiaci, Belgo, Hedu, Durotriges, Cimbri, Carnubii or Cornubii, and Dumnones. The next province was Britannia Secunda, comprehending the tract westward of the Severn: of this only the south-eastern angle belongs to England; and its original inhabitants were the Silures, a warlike people, whose dominion, while independent, extended over South Wales. The third was the Flavian province, Flavia Caesaris, between the Thanes, the Severn, and the Humber. Here were situated the nations called Dobuni, Cassii or Cattieuchlani, Carnubii, Trinovantes, Iceni, and Cornovii. The fourth province was Maxima Caesaris, north-eastward of the foregoing, and extending to the wall of Severus, between the rivers Severn and Humber, inhabited by the people called Parisii, Brigantes, Votiuns, and Sestuntes. Beyond the wall was a province styled Valentinian, reaching to the rivers Clyde and Forth, in Scotland. The southern portion, now included in the counties of Cumberland and Northumberland, was perhaps partly inhabited by the Muniti, the Godeni, and the Otabini.

After the Anglo-Saxons obtained possession of the country, it was divided into seven independent kingdoms, the limits of which have been already given in the historical sketch. The division of England into counties and hundreds has been attributed to Alfred the Great; but without sufficient authority. The institution of circuits took place in the reign of Henry II.

England is now divided into six circuits and forty counties.

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* c. stands for city; a. for assize town.
ENGLAND. (TOPOGRAPHY.)

NORFOLK CIRCUIT. Chief Towns. Bucks

Bucks...Titchfield, a.
Aylesbury, a.

Bedford. Bedford...

Huntingdon. Huntingdon, a.

Cambridge. Cambridge, a.

Suffolk. Bury, a.

Norfolk. Norwich, a.

Western Circuit. Chief Towns.

Hants. Winchester, a.

Wilt. Salisbury, a.

Dorset. Dorchester, a.

Somerset. Wells, a.

Devon. Exeter, c. a.

Cornwall. Launceston, a.

The principality of Wales is divided into twelve counties.

CHESTER CIRCUIT. Chief Towns. Flint

Flint...St Asaph, c.

Mold, a.

Deesb. Denbigh, a.

Ruthin, a.

Montgomery. Montgomery.

N. WALES CIRCUIT, Chief Towns. Anglesey

Glas. Caernarvon, a.

Bangor, a.

Merioneth. Dolgelly, a.

Bala, a.

The natural geographical divisions of England correspond to the old roman provinces. 1. The first of these, Britannia Prima, or Southern England, comprises the whole region of the southern coast, the estuaries of the Thames and the Severn indicating the northern boundary. This division includes the seven southern counties. The prominent features of it are: 1. The double ridge of chalk hills; one of which, commencing in Hampshire, extends eastward along the southern side of the valley of the Thames, passing through Surrey and Kent, and terminating in the North and South Forelands; the other ridge, commencing in Dorsetshire, extends along the coast of Hampshire and Sussex, forming the south-eastern boundary of the county, between the promontory of Beachy Head. Between these two ranges, lies the extensive plain called the Weald of Kent. Another branch of the Dorsetshire ridge extends from Salisbury Plain in a north-east direction, through Bucks, into Suffolk. 2. The Devonian range, of primitive formation, which commencing in Somersetshire, extends south-westward into Devonshire, where it forms the high table-land of Dartmoor, terminating in the Cornish peninsula. 3. The Thames, the Humber, and the Severn form the boundaries of what may be called Central England, the ancient Flavia Caesarissia, including the twenty-one counties of the Oxford, Norfolk, and Midland circuits, the three counties of the Home circuit north of the Thames, and the county of Chester. The whole of this region may be described as a plain, broken only by hills of inconsiderable elevation. The principal features of this tract of country are: 1. The valley of the Thames, which, rising in the Gloucestershire hills, flows in a north-easterly direction to Oxford, where it bends southward, and after separating the county of Buckingham from Berks, Middlesex from Surrey, and Essex from Kent, receives the Medway at Sheerness, and forms one of the finest harbours in the world. 2. The valley of the Avon, which, rising on the borders of Leicestershire, flows south-westward, through Warwickshire and Worcestershire, and joins the Severn near Tewkesbury. The Cotswold hills separating the basin of the Severn from the head-waters of the Thames. 3. The plain of the Ouse, which, rising in Northamptonshire, flows in a south-easterly direction to Buckingham, and then turning to the north-east, flows through Bedfordshire, Hertfordshire, and into the Thames. The Avon, rising in Norfolk, falls into the Wash at Lynn Regis. The whole tract lying between the Ouse and the Nene, the Northampton river, is a flat and marshy plain, abounding with lakes and mereS, and terminating in the deep farth or gulf which divides the coasts of Lincolnshire and Norfolk, and which probably extended, in ancient times, much higher up the country, converting Norfolk into a peninsula. 4. The high plains of Leicestershire, famous for their pastures, appear to form the central table-land, which divides the head-waters of the two rivers flowing south-westward of the Severn, the Northamptonshire waters which reach the Wash, and the streams which flow northward into the Trent. This last river, which communicates by canals with the Mersey, the Severn, and the Thames, rises in Staffordshire, and has an ancient course, or a course joined by the Mersey, bringing the waters of Derbyshire, and the Soare, flowing from Leicestershire, it begins to wind towards the north-east flowing by Nottingham and Newarke, and then turning to the north, separates the counties of Nottingham and Lincoln, and falls into the Humber. 5. The Mersey, collecting its head-waters from the Yorkshire moors, at no great distance from the springs of the Derwent and the Don, runs westward, dividing Cheshire from Lancashire, and after receiving the Irwell and the Weyer, falls into a large estuary, near the entrance of which Liverpool is situated, and which is separated by a narrow peninsula from that of the Dee.

III. The third division, or Northern England, corresponding to the Roman Maxima Caesarissia, includes the six counties of the Northern Circuit. The chief feature in this region is the extensive region of the Northern Ouse, which collects the streams that descend in a south-easterly or south-western course from the eastern and western moorlands. The vale of York, which is watered by the Ouse, is one of the most extensive and fertile in the kingdom, comprising 12,000 square mileS. A narrow district of inconsiderable elevation separates the waters of the Ouse, on the north, from the Vale of Stockton, traversed by the river Tees, which, rising in Westmoreland, flows eastward, separating Durham and the North Riding of Yorkshire, and falling into the German Ocean. 3. The Moorlands, occupying the summits and declivities of the mountainous range sometimes called the English Apennines, which commencing in Derbyshire, stretches northward to Linkiltrowg or West Lothian, separating the eastern from the western coasts. One branch of this range, rising on the eastern border of Cumberland, terminates at Geltgale Forest, while another branch shoots off on the north of Westmoreland towards the Irish Sea. The principal elevations belonging to this range are, in Yorkshire, Crossfell, 3390 feet above the sea, Bowfell, 3440, and Helvellyn, 3285, in Westmoreland, Skiddaw, 3265, and in Cumberland, Grasmere, 2865, Saddleback, 3048, Skidaw, 3175, and Seafell, 3240. The Moors, from which Westmoreland derives its name, fill up the greater part of that county and the adjacent parts of Lancashire, Yorkshire, and Durham. The eastern declivity of
the range contains that remarkable series of picturesque lakes, through which the waters of Westmoreland and Cumberland descend to the Irish Sea. 4. The vale of Carlisle in Cumberland. And 6. That of the Coquet in Northumberland.

IV. The fourth of the grand divisions of the southern part of Britain, which formed the Britannia Secunda of the Romans, forms the greater part of the principality of Wales. (See Water.) The vale of the Severn, its ancient boundary on the east, is now, however, wholly comprehended in England. This fine river, taking its rise in Plynlimon on the borders of Montgomery and Cardigan, winds in a northerly course to the English border, whence it passes eastward to Shrewsbury, and soon after winding round to the south, traverses Shropshire, Worcestershire, and Gloucestershire, and being joined by the Avon, after a course of 200 miles, falls into the noble estuary at the head of the Bristol Channel.

The woodlands of England are, Kent, Surrey, Sussex, Hampshire, Worcestershire, and Cheshire, with parts of Oxfordshire, Berkshire, Buckinghamshire, Leicestershire, Northamptonshire, and Yorkshire. The soil of the midland counties is generally a strong loam; sandy soils cover a large space in Northumberland and the North of Ireland, in many parts of Northampton, with a species of ferruginous soil called red land; and Norfolk is almost entirely a sandy loam, except in the eastern part where clay appears. The wealds of Kent, Sussex, and Surrey present the greatest surface of unbroken clay-land. The graving counties are, Leicestershire, Lincoln, Northampton, parts of Yorkshire and Durham, and Somerset. The dairy counties are, Cheshire, Shropshire, Gloucestershire, Wiltshire, Bucks, Devon, Dorset, Essex, Suffolk, Cambridge, and parts of Derby and York. The arable farms of greatest extent are found in Norfolk, Suffolk, Essex, Hertfordshire, Surrey, Sussex, Kent, Hampshire, Bedfordshire, Berks, Yorkshire, Durham, and Northumberland. The barley counties are, Norfolk, Suffolk, Cambridgeshire, Bedfordshire, Leicestershire, Nottinghamshire, Berkshire, and the upper parts of Worcestershire and Herefordshire. Hops are grown chiefly in Kent, Sussex, and Surrey; also in parts of Essex, Worcestershire, Herefordshire, and Nottinghamshire. The orchards of Worcestershire, Herefordshire, Gloucestershire, Somersetshire, Devonshire, and Monmouthshire supply the manufacturers of cider a fruit abundant in these counties. Cheshire contains the principal salt mines. Coal abounds in all the counties north of the Humber, except Westmoreland. Derbyshire contains valuable lead mines, which were worked by the Romans, together with zinc and iron. Black lead is confined to a small district of Cumberland. Lead is found in abundance both in the northern and southern counties, as well as iron and copper; but tin, for which the island appears to have been resorted to from the earliest times, is confined to the south-western promontory. The principal islands off the English coast are, the Isle of Wight, annexed to Hampshire; the Isle of Anglesea, which forms a county of Wales; the Scilly Isles off the coast of Cornwall; and the Isle of Man in the Irish Sea.

Agriculture.—In England, according to Caesar, agriculture was not introduced by the Romans but by Belgians, which took shelter there from the encroachments of the Germans from Germany, about B. C. 150. These colonies began to cultivate the sea coasts; but the natives of the inland parts lived on roots, berries, flesh, and milk, and it appears from Dionysius that they never tasted fish. Pliny mentions the use of marl as being known to the Britons; and Diodorus Siculus describes their method of preserving corn, by laying it up in the ear in caves or granaries.

But the general spread of agriculture in Britain was no doubt due to the influence of the Romans, which produced a certain quantity of corn, which they imposed on every part of the country, as it fell under their dominion, obliged the inhabitants to practise tillage; and from the example of the conquerors, and the richness of the soil, they soon not only produced a sufficient quantity of corn for their own use and that of the Roman troops, but afforded every year a very great surplus for exportation.

At the arrival of the Anglo-Saxons, this island, according to Fleury, abounded in numerous flocks and herds, which these conquerors seized, and pastured for their own use; and, after their settlement, they still continued to follow pasturage as one of the chief means of their subsistence. This is evident from the great number of laws that were made in the Anglo-Saxon times, for regulating the prices of all kinds of tame-cattle, for directing the manner in which they were to be pastured, and for preserving them from thieves, robbers, and beasts of prey. (Wilkins, Leges Saxons., passim.)

The Welsh in this period, from the nature of their country and other circumstances, depended still more on their sheep, and, not having much land able to cultivate, are, at least, in most parts, as well tillers of the soil as grazers. Their laws respecting pasturage were more numerous and minute than those of the Saxons. (Leges Waliae, passim.) From these laws we learn, among many other particulars which need not be mentioned, that all the cattle of a village, though belonging to different owners, were pastured together in one herd, under the direction of one person (with proper assistants); whose oath, in all disputes about the cattle under his care, was decisive.

By one of these laws, they were prohibited from ploughing with horses, mares, or cows, and restricted to oxen. (Leges Wallisc, p. 288.) Their ploughs seem to have been very slight and unartificial: for it was enacted that no man should undertake to guide a plough, who could not make one; and that the driver should make the ropes with which it was drawn of twisted willows. (Ibid., p. 283.) Hence the number of ploughs was regulated by the number of plowy, whipping-trees, tail-witches, &c. But slight as these ploughs were, it was usual for six or eight persons to form themselves into a society for fitting out one of them, and providing it with oxen, and everything necessary for ploughing; and many of these associations were regulated for the regulation of such societies. This is a sufficient proof both of the poverty of the husbandmen, and of the imperfect state of agriculture among the ancient Britons in this period.

The division of landed estates into what are called inlands and outlands, originated with the Saxon princes and great men, who in the division of the conquered lands, obtained the largest shares, and are said to have subdivided their territory into two parts, which were so named. The inlands were those which lay most contiguous to the mansion-house of their owner, which he kept in his own immediate possession, and cultivated by his slaves, under the direction of a bailiff, for the purpose of raising provisions for his family. The outlands were those which lay at a greater distance from the mansion-house, and were set to the service of the husbandmen at a certain rent, which was very moderate and generally paid in kind. (Reliquia Spelmanniana, p. 12.)

The rent of lands in these times was established by law, and not by the owners of the land. By the laws of Ina, king of the West Saxons, who flourished in the end of the seventh and beginning of the eighth
centuries, a farm consisting of ten hides, or plough lands, was to pay the following rent, viz., ten casks of honey, three hundred loaves of bread, twelve casks of strong ale, thirty casks of small ale, two oxen, ten wethers, ten geese, twenty hens, one cask of butter, five salmon, twenty pounds of forage, and one hundred eels. (Wilkins, Leges Saxonia, p. 25.) The greatest part of the crown lands in every county was farmed in this manner by yeoars or farmers, who in general appear to have been freemen and soldiers.

That the conquest of England by the Normans contributed to the improvement of agriculture is undeniable, for a vast number of husbandmen, from the fertile and well cultivated plains of Flanders, France, and Normandy, settled in this island, obtained estates or farms, and employed the same methods in the cultivation of them that they had used in their native country.

The implements of husbandry, in this period, were of the same kind with those that are employed at present, though all of them, no doubt, much less perfect in their construction.

The various operations of husbandry, as manuring, ploughing, sowing, harrowing, reaping, threshing, winnowing, were practised by the writers of this period; but it is impossible to collect from them a distinct account of the manner in which these operations were performed.

Agriculture in the thirteenth and fourteenth centuries, it appears, was carried on with vigour. Sir John Fortescue, in a work in praise of the English laws, mentions the progress that had been made in planting hedges and hedge-row trees before the end of the fourteenth century. Judge Fortescue wrote his Legum Angliae in the fifteenth century, but it was not published till the reign of Henry VIII. In the law book called Flota (supposed to have been written by some lawyers, prisoners in the Fleet, in 1340), very particular directions are given as to the various operations of husbandry. This work, as well as others of the kind, is written in Latin, and even the farming accounts were in those days kept in that language, as they still are in the greater part of Hungary.

During the greater part of the fifteenth century England was engaged in civil wars, and agriculture, as well as other arts, declined. The labourers, called from the plough by royal proclamation or the mandates of their lords, perished in battle, or by accident and famine, the price of corn rose rapidly, and price notwithstanding various laws for its limitation, and this at last produced a memorable revolution in the state of agriculture, which made a mighty noise for many years. The prelates, barons, and other great proprietors of land, kept extensive tracts around their castles, which were called their demesne lands, in their own immediate possession, and cultivated them by their villains, and by hired servants, under the direction of their bailiffs. But these great landholders having often led their followers into the fields of war, their numbers were gradually diminished, and hired servants could not be procured on reasonable terms. This obliged the prelates, lords, and gentlemen to enclose the lands around their castles, and to convert them into pasture grounds. This practice of enclosing became very general in England about the middle of this period, and occasioned prodigious clamours from those who mistook the effect of depopulation for its cause.

The habit of enclosing lands and converting them to pasture continued after the cause had ceased, and an act was passed to stop its progress in the beginning of the sixteenth century. The dears of this period furnish another proof of the decline of agriculture. Wheat in 1437 and 1438 rose from 4s. or 4s. 6d., the ordinary price per quarter, to £1 6s. 8d., equivalent to £13 16s. 8d. of our money. Stow observes that, in these extremities, the common people endeavoured to preserve their wretched lives by drying the roots of herbs and converting them into a kind of bread. Land in those days was sold at ten years' purchase, so great was the insecurity of possession.

From the accession of Henry VII. in 1485, to nearly the middle of the seventeenth century, England enjoyed peace. To remove the effects of former wars, however, required a considerable time. The high price of labour, and the conversion of so much land to tillage, gave rise to the general impolicy statutes, prohibiting the exportation of corn; while a great demand was created for wool by the manufacturers of the Netherlands, which tended to enhance the value of pasture lands, and depopulate the country. The flocks of individuals, in these times, sometimes exceeded twenty thousand, and an act was passed by Henry VIII., restricting them to a tenth of that number, apparently eluded from the partial exception of hereditary opulence. Had the restraints imposed on the exportation of corn been transferred to wool, the internal consumption would have soon regulated the home market. On the other hand, the increase of arable between arable and pasture lands would soon have been adjusted, and the declining cultivation of the country restored. An improved cultivation was reserved, however, for a future period, when persecution extirpated manufactures from the Netherlands; then, when the exportation of English wool had subsided, and its price diminished, the farmer or landlord, disappointed of his former exuberant profits, discovered the necessity of resuming the plough, and restoring his pastures to culture.

Agriculture, soon after the beginning of the sixteenth century, partook of the general improvement which followed the invention of the art of printing, the revival of literature, and the more settled authority of government; and, instead of the occasional notices of historians, we can now refer to regular treatises, written by men who engaged eagerly in this neglected, and hitherto degraded, occupation.

The culture of hops was either introduced or revived early in the reign of Henry VIII.; and that of flax was attempted, but without success, though enforced by law. (Holinshead, p. 110, 111; 24 Hen. 8. c. 4.) The legislature at that time endeavoured to execute, by an act of Parliament, a number of pastoral improvements which have since been fostered and cherished by bounty; or, what is better, pursued from the common motive of self-interest.

The breeding of horses was now much encouraged.

To the passion of the age, and the predilection of the monarch for splendid tournaments, may be attributed the attention bestowed on a breed of horses of a strength and stature adapted to the weight of the complicated panoply with which the knight and his coursers were both invested. Statutes of a singular nature were enacted, allotting for deer parks a certain proportion of breeding mares, and enjoining, not the prelates and nobles only, but those whose wives wore velvet bonnets, to have stallions of a certain size for their saddle. The legal standard was fifteen hands in horses, thirteen in mares, and "unlikely tils" were, without distinction, consigned to execution. (27 Hen. 8. cap. 6; 36 Hen. 8. cap. 1. cap. 15. Henry VIII. Systemes and Observations on the Statutes, p. 443.) James the Fourth of Scotland, with more propriety, imported horses from foreign countries in order to improve the degenerate breed of his own. (Pitcairn, p. 153.) The cultivation of the vines for their winter produce was still unknown; nor were they propagated in England till a subsequent period. (Holinshead,
The condition of a yeoman, before or about Elizabeth's time, is exemplified in the case of bishop Latimer's father. "My father," says Hugh Latimer, "was a yeoman, and had no land of his own; only he had a farm of three or four pounds by the year at that time, but he was left with half a dozen men. He had a walk for a hundred sheep; and my mother milked thirty kine, &c. He kept his son at school till he went to the university, and maintained him there; he married his daughters with five pounds, or twenty nobles apiece; he kept hospitality with his neighbours, and some alms he gave to the poor; and all this he did out of the said farm." Giplin's Life of Latimer.

Cattle were not plentiful in England at the beginning of Elizabeth's reign. In 1563 it was enacted that no one should eat flesh on Wednesdays or Fridays, on forfeiture of three pounds, unless in case of sickness, or of a special license, neither of which was to extend to beef or veal. (Stat. 5 Eliz. cap. 4.) Great pains were taken in the act to prove that it was a political, not a religious measure.

The vast number of parks in the kingdom are complained of by Harrison. "There are not less," he says, "than ten hundred in England, where almost nothing is kept but a sorte of wilde and savage beasts, cherished for pleasure and delight." And pursuing the same subject, he says, "that if the world last a while after this rate, wheate and rie will be no graffe for poore men to feed on." Description of Britaine, p. 105.

Great attention was still paid to the breed of horses in England; but, during the reign of Elizabeth, it was found necessary to lower the standard appointed by Henry VIII. for stallions, from fourteen hands to thirteen. This modification, however, was only to take place in the counties of Cambridge, Huntingdon, Northampton, Lincoln, Norfolk, and Suffolk. (18 Eliz. cap. 8.) No stallion of less height could be turned out on commons, forests, &c., for fear of deteriorating the breed. Harrison extols the height and strength of the English draught-horses; five or six of them, he says, will with ease draw three thousand weight of the greatest tale for a long journey.

The vine was early cultivated for wine in England; but it is probable this branch of culture declined with the suppression of the monasteries, and the more general introduction of beer. So that it would soon find that good beer was a cheaper and better drink, than any wine that could be made in this country. Though in 1655, in this reign, the potato was introduced from Santa Fé by Capt. Hawkins, yet it did not come into general use, even in gardens, for nearly two centuries afterwards.

The seventeenth century is distinguished by some important improvements in agriculture, amongst which are the introduction of clover, turnips, and endive in England; of hedges in Scotland and Ireland; and the execution of extensive embankments and drains.

For the adoption of the clover, as an agricultural plant, we are indebted to Sir Richard Weston, who, in 1642, gives an account of its culture in his Hertfordshire, where he says, "he saw it cutting near Antwerp, on the 1st of June, 1644, being then two feet long, and very thick; that he saw it cut again on the 29th of the same month, being twenty inches long; and a third time in August, being eighteen inches long.

Turnips were probably introduced as a field crop in the beginning of the 18th century, though they may probably have been grown in the gardens of the church establishments long before.

The first notices of sheep being fed on the ground with turnips, is given in Houghton's Collections on husbandry, and trade, p. 189, in the 13th year of the reign of James I. In 1834, Worlidge, one of Houghton's correspondents, observes, "sheep fatten very well on turnips, which prove an excellent nourishment for them in hard winters, when fodder is scarce; for they will not only eat the greens, but feed on the roots in the ground, and thrive very well on the very skin.—Ten acres," he adds, "owsen with clover, turnips, &c., will feed as many sheep as one hundred acres thereof would before have done." Houghton's Collections, vol. iv. p. 142—144.

Potatoes, first introduced in 1655, were at this time beginning to attract notice. "The potato," says Houghton, "is a bacciferous herb, with esculent roots, bearing winged leaves, and a bell flower.—This, I have been informed, was brought first out of Virginia by Sir Walter Raleigh; and he stopping at Ireland, some was planted there, where it thrived very well, and to good purpose; for in their succeeding wars, when all the corn above ground was destroyed, this supported them; for the soldiers, unless they had dug up all the ground where they grew, and almost sifted it, could not extinguish it. From thence they were brought to Lancashire, where they are very numerous, and now have began to spread all the kingdom over. They are a pleasant look and taste, or roasted, and eaten with butter and sugar. There is a sort brought from Spain that are of a longer form, and are more insipid than ours; they are much set by, and sold for sixpence or eightpence the pound."

Embarkations were made on the eastward of England, in various places, by the Romans, when in possession of the country, and afterwards by some wealthy religious houses, and by the government. Considerable exertions were made at Boston during the reign of Henry VII., under the direction of Mayhew Hake, a Flemish engineer, and fourteen masters; but the principal effort of that period, for agricultural purposes, was made during the protectorate, by Colonel Vermuyden, a Fleming, who served in Cromwell's army. Speaking of this engineer's exertions, Harte observes, "if my account stands right (and it comes from the best authority extant), our kingdom in the space of a few years, till the year 1651 only, had recovered, or was on the point of recovering, in Lincolnshire, Cambridgeshire, Huntingdonshire, and Kent, 425,000 acres of fens and morasses, which were advanced in general, from half a crown per acre to twenty and thirty shillings. In that period, few statesmen or others who have better deserved a statue or monument from this country than Vermuyden, the principal undertaker.

The exportation of corn was regulated by various laws, during the sixteenth century; and importation...
was not restrained even in plenty and cheapness. In 1663 was passed the first statute for levying tolls at turnip-seed, and the seed of their improved system of agriculture began also to be made during this century.

In England, from the restoration to the middle of the eighteenth century, very little improvement took place, either in the cultivation of the soil, or in the management of live stock. Even clover and turnips (the great support of the present improved system of agriculture) were confined to a few districts, and at the close of this period were scarcely cultivated at all by common farmers in the northern parts of the island. From the Whole Art of Husbandry, published by Mortimer in 1706, a work of considerable merit, it does not appear that much was made of his practices till near the end of last century. In those districts where clover and green-grass were cultivated, they were cut green, and used for soiling as at present. Turnips were sown broadcast, hand-hoed, and used for feeding sheep and cattle, as they are still in most districts of England.

In the beginning of the eighteenth century, a considerable improvement in the process of culture was introduced by Jethro Tull, a cultivator of Berkshire, who began to drill wheat and other crops about the year 1701, and whose Horse-hoeing Husbandry was published in 1731.

Tull's theory is that the roots of plants extend much farther than is commonly believed; and he inquires into the nature of their food. After examining several hypotheses, he decides the food of plants to be fine particles of earth. The chief, and almost the only use of dung, he thinks, is to divide the earth; to dissolve the "terrestrial matter which affords nutriment to the mouths of vegetable roots"; and this can be done more completely by tilage. It is therefore necessary, not only to pulverise the soil by repeated ploughings before it is seeded; but, as it becomes gradually more and more compressed afterwards, recourse must be had to tilage or horse-hoeing, while the plants are growing; which also destroys the weeds that would deprive the plants of their nourishment. The leading feature of Tull's husbandry, is his practice of laying the land into narrow ridges of five or six feet, and upon the middle of these drilling one, two, or three rows; distant from one another about seven inches, when there were three; and ten inches, when only two. The distance of the plants on one ridge from those on the contiguous one, he called an interval; the distance between the rows on the same ridge a space, or portion. Enclosures by present and by act of parliament in 1731 were made by the horse-hoe, and the latter by the hand-hoe.

In the culture of wheat Tull began with ridges six feet broad, or eleven on a breadth of sixty-six feet; but on this he afterwards had fourteen ridges. After trying different numbers of rows on a ridge, he at last preferred two, with an intervening space of about ten inches. He allowed only three pecks of seed for an acre. The first hoeing was performed by turning a furrow from the row, as soon as the plant had put forth four or five leaves; so that it was done before, or at the beginning of, winter. The next hoeing was in spring, by which the earth was returned to the plants. The subsequent operations depended upon the circumstances and condition of the land, and the state of the weather. The next year's crop of wheat was sown upon the intervals which had been unoccupied the former year; but this he does not seem to think was a matter of much consequence. According to Tull, a rotation of crops of different species was altogether unnecessary; and he labours hard to prove, against Dr Woodward, that the advantages of such a change, under his plan of tillage, were quite chimerical; though he seems to admit the benefit of a change of the seed itself. But the best method of determining the question involved in this passage is to have stated the amount of his crops per acre, and the quality of the grain, instead of resting the superiority of his management on the alleged saving of expense, when compared with the common broad-cast husbandry.

On the culture of the turnip, both his principles and his practice are much more correct. The ridges were of the same breadth as for wheat; but only one row was drilled on each. His management, while the crop was growing, differs very little from the present practice. When drilled on the level, it is impossible, he observes, to hoe-plough them so well as when they are planted upon ridges. But the seed was deposited at different depths, the half about four inches deep, and the other half exactly over that, at the depth of half an inch.

Drilling, and horse and hand-hoeing, seem to have been in use before the publication of Tull's book. "Hoeing," he says, "may be divided into deep, which is our horse-hoeing; and shallow, which is the English hand-hoeing; and also the shallow horse-hoeing used in some places between a foot, where the intervals are very narrow, as sixteen or eighteen inches. This is but another name for hand-hoeing, or a succedaneum to it, and can neither supply the use of dung, nor of fallow, and may be properly called scratch-hoeing." But in his mode of forming ridges, his practice seems to have been original; his implements display much ingenuity; and his claim to the title of father of the present horse-hoeing husbandry of Great Britain seems indisputable. Three several translations of Tull's book were published in France.

In the live stock of British agriculture, very little improvement had been made previously to the middle of the eighteenth century, or later. About this time the best breed of cattle and sheep were about Doncaster, in Yorkshire, and in Leicestershire, and the first grand and successful effort to improve them was made by Robert Bakewell, of Dishley in the latter county.

As the leading features of practical agricultural improvement in England during the eighteenth century, and to the present time, we may enumerate the following:—The gradual introduction of a better system of rotation since the publication of Tull's Horse-hoeing Husbandry, and other agricultural works, from 1760 to 1800; the improvement of live stock by Bakewell, about 1760; the introduction of growing turnips, the use of lime in agriculture, and the convertible husbandry, by Pringle, and more especially by Dawson, about 1765; the improved swing plough, by Small, about 1790; and the improved thrashing machine, by Mickle, about 1785. As improvements of comparatively limited application might be mentioned, the art of tapping springs, or wint has been called Elkington's mode of draining, which seems to have been discovered by Dr Anderson, from principle, and Mr Elkington, by accident, about 1760, or later; and the revival of the art of irrigation, by Boswell, about 1780; the field culture of the potato, shortly after 1750; the introduction of the Swedish turnip, about 1790; of spring wheat, about 1795; of summer wheat, about 1800; and of mangold wurtzel more recently, have, with the introduction of other improved field plants, and improved herds of animals, contributed to the increase and improvement of the produce of agriculture, as the enclosing of common field lands and wastes, and the improvements of mosses and marshes, have contributed to increase the produce and salubrity of the general surface of the country.
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<th>Oats (Qrs.)</th>
<th>Indian Corn (Qrs.)</th>
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The Regulations adopted for the purpose of giving effect to the law which places the commercial intercourse between Great Britain and Ireland on the footing of a Coasting Trade, have caused the Customs' Department to keep any record of goods passing from one country to the other during these years, except so far as regards the shipments of corn from Ireland to Great Britain.
Manufactures and Commerce.—The manufactures and commerce of England, which form such important features of the country, have already been treated of in the article Britain, to which the reader is referred. See also the articles Commerce, Cotton Manufacture, Iron Manufacture, Woolen Manufacture, Shipping, &c.

Government and Jurisprudence.—See the article British Constitution, and also the article Courts of Law (in England), and other articles on legal subjects, such as Assize, Criminal Law, Equity, Jury, &c.

Church.—The established religion in England is Episcopacy. The king is the supreme head; by this authority he convenes and prorogues the convocations of the clergy. The church is governed by two archbishops and twenty-five bishops. The archbishop of Canterbury is styled the primate of all England, and to him belongs the privilege of crowning the kings and queens of England. The province of Canterbury comprehends twenty-one bishoprics. In the province of the archbishop of York, who is called the primate of England, there are four bishoprics. Archbishops and bishops are appointed by the king, by what is called a congé d’élire, or leave to elect, which is sent to the dean and chapter naming the person to be chosen. The bishop of London, who presides over the clergy of the metropolis, and over the clergy of all the others. The bishop of Durham has certain prerogatives, as presiding over a see that constitutes a county palatine; the bishop of Winchester is third in dignity; the others take rank according to seniority of consecration. The archbishops and bishops (except the bishop of Sodor and Man) have seats in the house of lords, and are styled the spiritual lords. The archbishops have the title of grace, and most reverend father in God, by divine providence; bishops are addressed by the title of lord, and right reverend father in God by divine permission. The former are said to be enfronched, the latter installed. To every cathedral belong several prebendaries and a dean, who form the dean and chapter, or council of the bishop. The next order of the clergy is that of archdeacons; their number is sixty; their office is to reform abuses, and to induce into benefices. The most numerous and laziest order of the clergy are the deacons, curates, vicars, and rectors. The office of the deacon is confined to baptism, reading in the church, and assisting the priest at the communion. A person is one who has full possession of all the rights of a parish church; if the great tithes are impaired, the priest is called a parson. A curate is one who is not instituted to the cure of souls, but exercises the spiritual office in a parish under a rector or vicar. The conviction of the clergy, which is the highest ecclesiastical court, has not been permitted by government to do any business since 1717, and is merely continued as a matter of form. The doctrines of the church of England are contained in the thirty-nine articles: the form of worship is directed by a liturgy.

The first steps to the establishment of the English church were slow. (See the sketch of ecclesiastical history in the present article.) It remained at first many of the features of the Roman church, both in regard to doctrine and rites. After the parliament had declared Henry VIII. the only supreme head of the church, and the conviction of the clergy had voted that the bishop of Rome had no more jurisdiction in England than in any other foreign bishop, the articles of faith of the new church were declared to consist in the Scriptures and the three creeds, the Apostolic, the Nicene, and the Athanasian (see Creeds); the real presence, the use of images, the invocation of saints, &c., were still maintained. Under Edward, the new liturgy was composed in English, and took the place of the old mass; the doctrines were also stated in forty articles. With the death of Mary, the old religion was re-established; and it was till that of Elizabeth that the church of England was finally instituted. As no change was made in the episcopal form of government, and some rites and ceremonies were retained, which many of the reformed considered as superstitions, this circumstance gave rise to many future dissensions. The controversy concerning the sacramental part of divine worship commenced with those exiles, who, in 1554, fled from the persecutions of queen Mary, and took refuge in Germany. On the accession of Elizabeth, they returned, and renewed the contest at home, which had begun abroad. These were called Puritans, and at one time comprised many distinguished members of the English clergy. (See Puritans.) On the accession of James, the Puritans hoped for some relief; but an episcopal hierarchy was more favourable to his views than the Presbyterian form of government, and he publicly adopted the maxim "No bishop, no king." When the English divines returned from the synod of Dort, the king and the majority of the Episcopalian clergy discovered an inclination of the sentiments of Arminius, which have since prevailed in the British Calvinism among the English clergy. Under Charles I., the triumph of the extreme party, the remonstrance of Laud, to reduce all the churches of Great Britain under the jurisdiction of bishops, and the suppression of the opinions and institutions that were peculiar to Calvinism, cost the archbishop of Canterbury his head, and had no little effect in impeding the civil contest between the throne and the parliament. After the death of Laud, the parliament abolished the Episcopal government, and condemned everything in the ecclesiastical establishment that was contrary to the doctrine, worship, and discipline of the church of Geneva. As soon as Charles II. was restored to the throne, the ancient forms of ecclesiastical government and public worship were restored; and, in 1662, a public law, entitled the act of uniformity, was enacted, by which all who refused to observe the rites and subscribe the doctrines of the church of England, were entirely excluded from its dominions. In 1688, at the decision of the House of Lords against the majority succession to the throne is of divine institution, and cannot be interrupted; that the church is subject to the jurisdiction of God alone, and, consequently, that certain bishops, deposed by king William, remained, notwithstanding, true bishops; and that those who had been appointed in their places were rebels and schismatics, and all who held communion with them were guilty of rebellion and schism. The gradual progress of civil and religious liberty, during the last 150 years, has settled practically many such controversies. The great increase of the dissenters in recent times (they are estimated to be as numerous as the members of the established church) has led to new concessions in their favor; the repeal of the corporation and test acts (q. v.) and the Catholic emancipation (q. v.), as it is called, are among the important events of the late reign.

We have said, that the doctrines of the church of England are contained in the thirty-nine articles; we are not ignorant that the most eminent English divines have doubted whether they are Calvinistic or Lutheran, that some have denominated them articles of peace, and that not a few have written in direct
opposition to them. But they are the established confession of the English church, and, as such, deserve a short analysis. The five first articles contain a profession of faith in the Trinity; the incarnation of Jesus Christ, his descent to hell, and his resurrection; the divinity of the Holy Ghost, and the three persons in the Godhead. The three following articles are to the canon of the Scripture. The eighth article declares a belief in the Apostles', Nicene, and Athanasian creeds. The ninth and following articles contain the doctrine of original sin, of justification by faith alone, of predestination, &c. The nineteenth, twentieth, and twenty-first declare the church to be the only visible sign of the faithful; that it cannot decide nothing except by the Scriptures. The twenty-second rejects the doctrine of purgatory, indulgences, the adoration of images, and the invocation of saints. The twenty-third declares that only those lawfully called shall preach or administer the sacraments. The twenty-fourth requires the liturgy to be in English. The twenty-fifth and twenty-sixth declare the sacraments effectual signs of grace (though administered by evil men), by which God excites and confirms our faith. They are two; baptism and the Lord's supper. Baptism, according to the fourteenth article, is a sign of regeneration, and the seal of our adoption, by which faith is confirmed and grace increased. In the Lord's supper, according to article twenty eighth, the bread is the communion of the body of Christ, the wine the communion of his blood, but only through faith (article twenty-ninth); and the communion must be administered in both kinds (article thirty). The twenty-eighth article condemns the doctrine of transsubstantiation, and the elevation and adoration of the host; the thirty-first rejects the sacrifice of the mass as blasphemous; the thirty-second permits the marriage of the clergy; the thirty-third maintains the efficacy of excommunication. The remaining articles relate to the supremacy of the king, the condemnation of Anabaptists, &c.

Language.—The Saxon, or Anglo-Saxon (q. v.) language, as it is more frequently called, was the basis of the English; and both have descended from what is commonly denominated the Gothic or Teutonic stock, particularly the dialect called Low German (q. v.). It has, however, retained many words of the ancient language spoken by the Britons before the arrival of the Saxons among them. Upon the introduction of Christianity into Great Britain, in the sixth century, Gothic, the Latin, the Teutonic language, contributed, by degrees, to the common dialect of the nation. About the year 1150, according to doctor Johnson, the Saxon dialect of our ancestors took a form in which the beginning of our present English can plainly be discovered. From that period to this, it has been constantly receiving additions from various languages, and may now, according to doctor Webster, be considered as composed of, 1st, Saxon and Danish words of Teutonic and Gothic origin; 2d, British or Welsh, Cornish and Armorican, which may be considered as of Celtic origin; 3d, Norman; 4th, Latin; 5th, French; 6th, Greek; 7th, a few words directly from the Italian, Spanish, German, and other languages of the continent of Europe; 8th, a few foreign words, introduced by commerce or by political and literary intercourse. (Introfd. Eng. Dict.) This origin of our language justifies the opinion of doctor Johnson, in his Lectures on Rhetoric, characterizes it as a rude compound.

The leading characteristics of the English language are said, by our own writers, to be, 1. That it is strong and expressive; which qualities are enhanced by a facility in compounding words; but in this last particular, it is certainly far inferior to the German.

2. That it is very copious, few languages being more so. Under this head we may remark, that it possesses one decisive advantage over most other modern languages; that, in addition to the language commonly used in prose, it has a very copious stock of words exclusively used in poetical composition. 3. That it is more adapted to being adapted to all styles of composition, the grave and gay, forcible and tender, sublime and ludicrous. But in this respect, we do not know that it is strikingly distinguished from many other modern languages. 4. That it has the advantage of being more simple in its form and construction than any of the European languages. This simplicity consists, principally, in the following particulars:—its nouns have only two cases, the nominative and genitive (this deficiency of cases, however, prevents our using inversions of phrases like those which the Latin language allows; the French language is even inferior to the English in this respect), and have no difference of declension; its adjectives have no variation of gender or number, and are only varied to express the degrees of comparison; and the conjugations of its verbs are far less complex than those of the other European languages. 5. Among other qualities, we also hear the harmony of its language. In a general remark, we think, with a late writer, that "strength and expressiveness, rather than grace and melody, are the distinguishing qualities of the English language."—"Different nations," says lord Kames (Elements of Criticism), "judge differently of the harshness or smoothness of articulate sounds: a sound, for example, harsh and disagreeable to an Italian, may be abundantly smooth to a northern ear: here every nation must judge for itself; nor can there be any solid ground for a preference, when there is no common standard to which we can appeal." In order to judge correctly on this point, we must observe how it strikes the ears of foreigners, who have some acquaintance with it; yet we must, at the same time, receive with much caution the observations of men who have as strong a partiality as ourselves for their native language.

As a general remark, we think, that those modern languages which are derived from the Latin are more harmonious than those of Teutonic origin. (See Consonant.) But, in order to satisfy ourselves how far we are liable to be deceived in respect to the supposed excellences of our native tongue, we extract the following remarks from that popular and weighty work on language, called the Harpe:—"The English language, which would be almost half-French, if its incompressible pronunciation did not separate it from all the languages of the world, and make applicable to it what Virgil said of the geographical position of the country—

1. Et penitus tot ad dievus orbe Britannor.—
2. A race of men from all the world disjoged.—

the English is still more overloaded than our own (French) with auxiliaries, particles, articles and prepositions; it hinders, on this point, and its modes are excessively limited. It has no conditional tense; it cannot say, as in French, je ferai, j'aurai, &c.; but it is necessary to prefix to the principal verb one of these—I would, I must, I could, I should have to. It cannot be denied that these signs, incessantly repeated, and even equivalent in their signification, are a serious, an immutable, and, in some cases, a resemblance to barbarism.

"But what, to every one except an Englishman, most bears that character, is their striking viciousness of pronunciation, which seems to be in conflict with the principles of human articulation. Now, this ought always to have a tendency to fix the nature of
the sounds, and it is particularly the object and intention of the 
vowels, which cannot meet the ear with too great distinctness. But what shall we say of a language, in which the vowels themselves, the very elements of all pronunciation, are so often indeterminate, and in which so many syllables are either half-crushed between the teeth, or vanish with a sibilant noise? 'The English language,' says Voltaire, 'gains upon us two hours a-day, by swallowing half of all his words.' I do not, however, attach much importance to such reproaches, because a language is always sufficiently good for those who use it from their infancy; but it is true, that we find, after a first and second Frenchman, tolerably well, for one Frenchman, who is able to speak good English; and this disproportion between two nations, closely united as they are by a regular and established intercourse, must be principally caused by the strangely whimsical pronunciation of the language of the English.' (vol. i. p. 143.)

"Yet, notwithstanding the indistinctness of their vowels, and their masses of consonants, they lay claim to harmony of language; and we will allow it to them, if, in return, they will admit that this harmony can be felt by themselves alone. They have, too, some advantages which, I think, we cannot deny them. If it is not allowed, so far as their poetry almost to as great an extent as in Italian, that is, much less than in Latin and Greek. Their constructions and poetical forms are bolder, and yet more manageable than ours. They can also employ rhyme, or not, as they please, and can indulge more than we can in the formation of new words." Observations of this kind must, however, be taken with much allowance. Another French writer, cited by Mr Mitford in his Harmony of the English Language, says—"The English speak so much between their teeth, that the French cannot understand them," and adds—"L'Anglais est la seconde langue pour laquelle il ne faut pas une langue." "It is impossible (says Mr Mitford) not to acknowledge that there is much justice in this imputation."

In our article Americanism (q. v.), we directed the reader's attention to the important fact, that English and American, on the one hand, offer the first instance in history of two great, independent, and active nations having a common language, but situated at a great distance from each other, and daily developing new and characteristic features. These relations must, sooner or later, exert a powerful influence upon the common language; for no language is so stable as not to undergo continual changes, if spoken by people in the full vigour of social and political life. This state of things has already produced some effect on the English language, as we have observed in that article. But, from the deep and natural interest felt by Americans in the literature of England, which must be a part of their country, and to which Spenser and Milton shall live in their works, the effect has hitherto been inconsiderable, and not greater than we should expect from the mere circumstance of so different and remote local situations. The most material difference, probably, has been in the pronunciation of the language, which, however important in our daily conversation, is of secondary importance in relation to the literature and written language of the two countries. It has often been observed by English travellers and others, that the pronunciation of the United States is far more uniform than that of England; and so nearly alike everywhere, that the people of any one town or district are perfectly understood in every other part of the country; which is not the case in England. When considered more minutely, however, there has for a long time existed a marked distinction between the pronunciation of the New England and Southern States. In New England, it is said by some, that the pronunciation has been, till lately, very nearly what it was in the mother country a century ago or more. However this may be, it is a well-known fact that the New England pronunciation has been materially changed since the publication and universal use of Dr. Walker's Dictionary, or within the last thirty years. That which prevailed before that period, was probably much influenced by the very general use of a small dictionary published by Perry. (See Worcester's edit. of Johnson, Pref., p. ix.) The pronunciation of some of the Southern States and Midlantic is more affected by the instructions of Scottish and Irish dialects; but peculiarities of pronunciation, have taught the people of these states to confound the established idiomatic distinction between shall and will, and should and would.

The orthography of our language has undergone no material change in America, it being the general inclination to follow that of the best English writers of the age. But English orthography is so irregular, particularly in the use of the vowels, as to make our language more difficult than any other to the European nations. The signs of the sounds are so incomprehensible, that even our foreigner, impressing himself upon the memory so distinctly as those of the other European languages do, and, of course, cannot be so easily remembered for future use. To this embarrassment is to be added our custom of throwing back the accent to the first syllables of words, which necessarily produces that hurried and indistinct utterance, of which foreigners so justly complain. We may here add a general remark or two of an intelligent German, who has had much experience in writing English, and whose observations are confirmed by our own experience, so far as we have had occasion to consider this subject. The English language is peculiarly adapted to exact discussions of all practical matters in society, and to political inquiries. It has also more force than the European languages generally, in descriptive writing, whether prose or poetry; and in poetry, it is much more adapted than the German to the formation of words which require a more reluctantly and capriciously than the Germans do. It is also to be observed, that we adopt new terms from the French, with more facility than from the German, notwithstanding the close affinity of the latter to our own language. This tendency to introduce Gallicisms led Doctor Johnson to apprehend, that, unless some check were interposed, the English nation would one day "be reduced to babble a dialect of France." For further information respecting the English language, see the article Anglo-Saxon.

Literature.—The literature of England is one of her proudest boasts. In this place, we can merely advert to a few of its more distinguished names, referring the reader to these in the Encyclopaedia for further information. To do the subject justice would require volumes. Gildas is, perhaps, the earliest English writer of whom anything is known; his appearance has been fixed in 560. Bede, the historian, flourished about the beginning of the eighth century. Alfred distinguished himself by his literary talents, no less than by his abilities as a monarch. The History of England was written by Matthew
Paris, a monk of St Alban's, who died in 1289. His authority is much respected by modern historians. During the thirteenth century appeared Roger Bacon, whose abilities, if we regard the general darkness of the age, cannot be sufficiently admired. The progress of learning could not be great among the generality of people in any country, while the art of printing remained unknown; an art for which the human race cannot be too grateful. While books could be multiplied only by the slow and expensive mode of transcription, they were confined to the possession of the great, who were frequently more engaged in the turbulent and destructive projects of ambition, than in the calm pursuits of literature. What little learning these early ages possessed, was confined to convents and monasteries. To these we chiefly owe the preservation of those monuments of antiquity, which have tended both to civilize modern nations, and to promote the improvement of modern taste. The art of printing, which Caxton introduced to England in 1471, conspired, more than any other cause, to advance the interests of learning in England, as well as in other nations. Chaucer, who is generally esteemed the father of English poetry, flourished before this period.

The period immediately succeeding the introduction of the art of printing, though distinguished, perhaps, less by the mechanical genius of the writer than by the ingenuity which has transmitted to posterity few who are known, except to the antiquary. The introduction of the reformation by Henry VIII. tended to emancipate the nation from those religious fetters in which it had formerly been held, and was succeeded by what is now universally considered to be the most brilliant era in English literature—namely, the Elizabethan. In the reign of that queen and of her successor James I., the drama was cultivated with unparalleled success. We need only mention the names of Marlow, Shirley, Ford, Massinger, Beaumont, Fletcher, Ben Jonson, and last of all, Shakespeare, to remind the reader of the high achievements accomplished in this department of literature. Spenser, too, in this age, sung with a luxuriant sweetness not equalled by any succeeding bard; and Bacon burst the fetters of Aristotle, and established a new epoch in the history of philosophy. Some calculations on government and politics must have been somewhat restrained by the almost unlimited power of Queen Elizabeth, the knowledge of law was not altogether neglected; and we find Plowden's and Dyer's names still mentioned with considerable approbation. Mathematical learning, as well as many of the sciences connected with it, were not neglected; but astronomy, one of the chief of these, was degraded by the prevailing propensity to astrology; and what was called natural philosophy was seldom anything more than alchemy. Dee was at that time celebrated for his knowledge in mathematics; he was esteemed an alchemist and a magnetist. But Diggles did not add any mathematical knowledge to the improvement of the military art; Thomas Harriot's improvements in algebraical calculations are still known; and John Hallegrave applied mathematics to the business of private life.

The navigators of this period, though they cannot be said to have contributed much to the improvement of literature, certainly widened the boundaries of human knowledge. Drake was the first Englishman who circumnavigated the globe. He was followed by John Cabot, while Frobisher, Gilbert, and Davis, signalized themselves by their discoveries in the northern ocean. Sir Walter Raleigh, a man of an ambitious and enterprising spirit, by his voyages, added somewhat to the knowledge of his countrymen, and contributed to the advance of learning by his History of the World; a performance still held in some degree of estimation. About this time, flourished Hakluyt, the compiler of a celebrated collection of voyages still known by his name.

The reign of Elizabeth produced several writers on botany, among whom have been named William Turner, William Bullein, Thomas Penny, and Henry Lyte. These are known chiefly to antiquaries; but the botanical works of Gerard and Parkinson have not long been displaced by the increase of botanical knowledge. Medicine, at the same time, boasted of many able practitioners, and of some successful writers. Of the latter class, Caius seems to have been the chief, since his celebrity is not yet obliterated. The knowledge of Greek and Latin, and of other languages, generally distinguished by the name of learned, was, during this age, more prevalent than at present. Elizabeth herself was no Inconsiderable scholar. Many translations of ancient authors were at this time given to the world; but an enumeration of their names would not be of much use, as they have long been displaced by others, which, if not more correct, are at least more agreeable to modern taste. With the knowledge of the ancient, the improvement of the English language, and the principles of criticism, kept an equal progress. In no time, indeed, did English come more nearly to the condition of perfection than during this age. If we except the History of the World, by Raleigh, already mentioned, and which, indeed, belongs not properly to the reign of Elizabeth, as it was published in that of James I., this period affords no historical performance of acknowledged distinction. The names of Stow and Camden, the antiquaries, are still well known, and their extraordinary merit is still acknowledged.

England did not, during this age, and, indeed, for a long period afterwards, produce any painter of celebrity. Several foreigners were introduced, who obtained considerable reputation; among these have been named Lucas de Heere, Cornelius Ketel, Frederic Zeuchero, Marc Gassard, and Henry Cornelius Vroom. The most noted engravers were William Cunyngham, Ralph Aggas, Humphrey Cole, John Bettes, William Rogers, Christopher Saxton, George Hoëniagle, and Robert Adams.

The reigns of James I. were distinguished by a literary undertaking of the greatest consequence to the nation. That version of the Bible which is still in use, was commenced in 1607. It was completed and published in 1611. Many of the most learned men in the nation were employed in this undertaking: those whose names have descended to posterity and greatest reputation, are Dr Andrews, Dr Overall, Mr Chaderton, Dr Reynolds, Dr Smith, Mr Downes, Mr Boyes, Dr Barlow, and Mr Fairclow. The theological disputes which about this time were agitated in England, and, indeed, in all Europe, gave rise to many theologians well skilled in the polemical arts of their time. Some of their names and works are still known, but they do not retain that celebrity which formerly was attached to them.

Several statesmen of considerable abilities adorned the reign of James; but the power of the king was still too arbitrary to permit the free discussion of the maxims of government. Sir Edward Coke has attained the highest celebrity, as a commentator on the laws of his country. Dr Cowel was, at the same period, remarkable for his proficiency in the civil law. In mathematical learning, the name of Briggs is well known, and his labours were celebrated for some inventions in mathematical instruments, lived about the same time. During the reign of James, natural history, and medical knowledge, did not make much progress.
The reign of Charles I. was distinguished by many polemical publications. The state of the nation was less favourable to political than to theological productions. The reformation in religion had raised men from inaction, and the mysteries of government began to be disguised with a charm formerly unknown. Hobbes, about this time, rendered himself remarkable for his metaphysical productions. Oughtred distinguished himself in mathematics, and Dugdale, Selden, Spelman, and Cotton, in antiquities. Harvey acquired immortality by the discovery of the circulation of the blood. Sir Peter Lely, Dobson, and Gengileschi, were eminent painters. Long Jones excelled in architecture; and Suckling and Crashaw succeeded in poetry. In the same career, were closely followed by Denham and Waller.

During the period of the commonwealth, and protectorship of Cromwell, flourished Harrington, the author of the Ocean; Walton, the learned editor of the Polyglott Bible; Pococke, the celebrated Orientalist; and John Milton, whose name alone would reflect a lustre on any age. About the same period flourished three writers distinguished by the singularity of their genius—Sir Thomas Brown, Urquhart, and Burton.

Under Charles II. Wallace and Ward acquired considerable reputation in mathematics. Sir Robert Boyle added great improvements to natural philosophy; and, by the invention of the air pump, gave an opportunity of making experiments, which greatly widened the boundaries of that science. Sir Kenelm Digby attached himself to similar pursuits; but his imagination was too active to permit him, in the way of experiment, to make his inductions with sufficient caution. Sir William Petty has been famed for his calculations in political arithmetic; and Shaftesbury is still known by his Characteristics. This age can also boast of Algernon Sidney, who published a book on government, and of Cowley, whose fine poetry is unfortunately marred by metaphysical affectations. Butler's Hudibras displays great wit and originality. Rochester, Buckingham, and Dorset, were also celebrated for the poignancy of their wit. In dramatic writing, the unfortunate Otway displayed a vigorous and pathetic fancy, which, to this day, commands admiration. Wycherly, as well as Vanbrugh and Gibber, of a somewhat later date, like all the comic poets of their time, had much wit, but little regard to decency.

Among the painters of this era, Sir Godfrey Kneller held a distinguished place. Verrio was celebrated for the ease with which he painted indifferently pictures, and the freedom with which he treated Charles II. Varelist, a Dutchman, was an eminent painter of flowers. William Vandevelde is said to remain unequalled for the representation of battles at sea. Cooper is admired as a painter of portraits. Among the eminent engravers of this period have been named William Faithorne, Payne, Pass, Hollar, Lomhart, Savage, White. Sir Christopher Wren, the noted architect, adorned this, and three succeeding reigns.

During the reign of Charles II. the Royal Society was instituted; but Sir Isaac Newton, who lived at this time, added more to the knowledge of nature by his discoveries than a hundred Tompkins, who had preceded him had been able to effect. His name alone would have been sufficient to render any age remarkable.

The short reign of James II. was distinguished by few eminent men peculiar to itself. Many of those of the preceding reign in the age of his predecessor continued to flourish.

The revolution, so favourable to the liberties of the country, gave a new impetus to the genius of Englishmen. Dryden, by the vigour of his imagination, profound judgment, and fine ear for harmony, may be said to have effected a revolution in the national taste. The names of Locke, Steele, Addison, Swift, Arbuthnot, Pope, and Gay, adorn the reign of Queen Anne. At later periods, we have Thomson, Akenside, Collins, Shenstone, Grey, Johnson, Goldsmith, Darwin, and others, until we reach Cowper, who may be said to have closed the literature of the last century, and opened up to the eyes of the present "fresh fields and pastures new.

Social State. In the social state of England, during the early periods of her history, has been already in some measure adverted to, particularly in the sketch of her ecclesiastical history and in the section Agriculture. On the modern composition of English society, two able works have recently been published—one, by a lady, entitled "A View of the Social State of England and France, during the 17th, 18th, and 19th Centuries;" the other, by Mr Edward Lytton Bulwer, entitled 'England and the English.' To these works we can do no more than refer, as the subject is much too extensive to be taken up here. We are to observe that every opinion, from the numerous fashionable novels of the day, it would be unfavourable. From these, society would appear to be parcelled out into numerous castes, and a paltry jealousy of each other to be the ruling passion of all. We are too strongly persuaded of the main independence of the English mind, to believe that such representations hold true of any but very insignificant sections of the people. Perhaps the most estimable quality of the English is their love of justice—the source of all honourable dealing among the higher classes, and of what is called fair-play in the transmission of lumber life. The principle that a man's word should be his bond is acted upon rigorously where the greatest interests are at stake; and on its observance, more than on that of any law, the financial and commercial prosperity of the country depends. Benevolence is another conspicuous feature in the English character. The interest taken in England in behalf of the oppressed in every quarter of the globe proves how much the enjoyment of freedom enlarges and liberalizes the mind.

In their habits and modes of ordinary life, the English are eminently domestic, especially when compared with the French. They are less able to distinguish the abodes even of the poor cottagers. In regard to food, their taste is inclined to that which is solid and substantial. Beer and porter constitute the staple drink of the great body of the people; but gin, of a cheap and pernicious kind, is still consumed in great quantities. Among the middle classes, the wines of Spain, Portugal, and Madeira, are in general use, and the cellars of the rich are stored with the choicest products of the French vineyards. A great dinner, followed by a long train of toasts, forms the bond of union to all political parties, and to all patriotic, benevolent, or even religious associations. The favourite amusements of the English nobility and gentry, are horse-racing and hunting, and no country rivals England in the high excellence to which she has brought the breed of horses. Boxing-matches, which used to be popular, have recently fallen into disuse. The amusements of cricket and tennis are very generally practised.

Crime, in England, has within the last hundred years, undergone a great change. Highway robbery, so prevalent towards the beginning and middle of last century, is now nearly unknown, but petty depredations have increased. The decrepit condition which exhibits the state of crime from the year 1820 to 1832 inclusive.
STATEMENT OF THE NUMBER OF PERSONS CHARGED WITH CRIMINAL OFFENCES, 1820-1833.

NUMBER OF PERSONS CHARGED WITH CRIMINAL OFFENCES, 1820-1833.

COUNTRIES. 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832

England 13,750 13,115 12,311 12,369 12,609 14,429 16,164 17,104 16,165 16,172 19,347 20,041 20,823

Of the above there were:

Hales 3,125 2,952 1,472 1,152 1,478 1,732 2,575 3,254 2,928 3,196 3,353 5,275 4,819

Mumbers 10,625 10,163 10,859 10,817 10,131 12,694 13,589 13,848 13,187 13,186 16,072 15,626 15,904

Total Convicted for Trial 13,750 13,115 12,311 12,369 12,609 14,429 16,164 17,104 16,165 16,172 19,347 20,041 20,823

NUMBER OF PERSONS CONVICTED, ACQUITTED, and not PROSECUTED, with the Sentences passed upon such as were Convicted.

Convicted and Sentenced—

To Death 238 215 169 130 185 130 120 100 120 130 170 190 240

To Transportation for Life 21 21 21 21 21 21 21 21 21 21 21 21 21

To Transportation for 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years 14 years

To Transportation for 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years 7 years

To Transportation for 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years 4 years

To Transportation for 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years

To Transportation for 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under 1 year 2 months and under

Imprisonment, and severely to be regarded 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years 2 years

Whipped, Fined, or kept in Hard Labour 4,089 4,073 4,089 4,089 4,089 4,089 4,089 4,089 4,089 4,089 4,089 4,089 4,089

Newly Convicted—

No Bills found and not prosecuted 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081 1,081

Total Convicted 14,831 14,326 13,592 13,351 12,794 15,054 16,946 18,074 16,946 16,946 20,428 21,062 21,843

* Of whom were executed 107 110 107 107 107 107 107 107 107 107 107 107 107

EAST INDIA COMPANY.

STATEMENT OF THE NUMBER OF PERSONS CHARGED WITH CRIMINAL OFFENCES, 1820-1833.
**ENGLAND. (SOCIAL STATE.)**

**SUMMARY OF CONVICTIONS, 1820—1832.**

### Nature of Crimes of which Persons were Convicted

| Year | Arson, and other wilful Burning of property | Burglary | Robbery | Breaking into a Dwelling-house and Larceny | Cattle Stealing | Mallenously Killing and Maiming | Child Stealing | Coining | Coin, passing off and forging Counterfeit | Embellishment (by Servants) | Forgery of and altering forged Instruments | Forged Bank Notes, having in Possession | Frame Breaking and Destroying Machinery | Fraudulent Offences | Game Laws, Offences against | Horse Stealing | Horse-breaking in the day-club, and Larceny | Legitimacy, Simple |
|------|--------------------------------------------|--------|--------|------------------------------------------|----------------|---------------------------------|---------------|-------|------------------------------------------|-------------------------------|---------------------------------|---------------------------|---------------------------|--------------------------|-------------------------|----------------------------|-------------------|-----------------|------------------------------------------|
| 1820 | 2                                           | 8      | 1      | 14                                        | 1              | 1                               | 1             | 2     | 1                                         | 2                             | 2                               | 1                         | 2                         | 1                         | 1                        | 1             | 1               | 1                                         |
| 1821 | 1                                           | 6      | 0      | 17                                        | 0              | 0                               | 1             | 2     | 0                                         | 2                             | 3                               | 0                         | 2                         | 0                         | 1                        | 1             | 1               | 1                                         |
| 1822 | 3                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 4     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 2                        | 1             | 1               | 1                                         |
| 1823 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 5     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 2                        | 1             | 1               | 1                                         |
| 1824 | 3                                           | 4      | 1      | 17                                        | 0              | 0                               | 1             | 6     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 2                        | 2             | 2               | 2                                         |
| 1825 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 7     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 2             | 2               | 2                                         |
| 1826 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 8     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 3             | 3               | 3                                         |
| 1827 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 9     | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 4             | 4               | 4                                         |
| 1828 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 10    | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 5             | 5               | 5                                         |
| 1829 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 11    | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 6             | 6               | 6                                         |
| 1830 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 12    | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 7             | 7               | 7                                         |
| 1831 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 13    | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 8             | 8               | 8                                         |
| 1832 | 4                                           | 3      | 1      | 17                                        | 0              | 0                               | 1             | 14    | 0                                         | 3                             | 3                               | 0                         | 4                         | 0                         | 3                        | 9             | 9               | 9                                         |

### Statement of the Number of Persons Sentenced to Death, together with Particulars of the Crimes of which they were convicted, and the Number who were executed in each Year, from 1820 to 1832, inclusive.

<table>
<thead>
<tr>
<th>Year</th>
<th>Nature of Crimes of which Persons convicted of Death</th>
<th>Sentence</th>
<th>Executed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820</td>
<td>Arson, and other wilful Burning of property</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>1821</td>
<td>Burglary</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>1822</td>
<td>Robbery</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>1823</td>
<td>Breaking into a Dwelling-house and Larceny</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1824</td>
<td>Cattle Stealing</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>1825</td>
<td>Mallenously Killing and Maiming</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1826</td>
<td>Child Stealing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1827</td>
<td>Coining</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1828</td>
<td>Coin, passing off and forging Counterfeit</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1829</td>
<td>Embellishment (by Servants)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1830</td>
<td>Forgery of and altering forged Instruments</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1831</td>
<td>Forged Bank Notes, having in Possession</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1832</td>
<td>Frame Breaking and Destroying Machinery</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1820</td>
<td>Fraudulent Offences</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1821</td>
<td>Game Laws, Offences against</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1822</td>
<td>Horse Stealing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1823</td>
<td>Horse-breaking in the day-club, and Larceny</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1824</td>
<td>Legitimacy, Simple</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1825</td>
<td>Shooting at, Stabbing, Wounding, and administering</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1826</td>
<td>in women compassing the parks of their Infants</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1827</td>
<td>Oath, theft, taking and Administering</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1828</td>
<td>Forgery</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1829</td>
<td>Rape, &amp;c.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1830</td>
<td>Assault with intent to commit</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1831</td>
<td>Riot and Felony</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1832</td>
<td>Robbery of the Person, on the Highway and elsewhere.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1833</td>
<td>Assorters to the parks</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1834</td>
<td>Stealing part of a Wrench</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1835</td>
<td>Transferring a Stamp, to defraud</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1836</td>
<td>Transferring a Stamp, to defraud</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1837</td>
<td>Armed to assist burglars</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1838</td>
<td>Felony and Misdemeanor (not otherwise described)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Number of Persons Convicted: 6,328

Total Number of Persons sentenced to Death: 1,115
For the population of England and Wales in 1801, 1811, 1821, and 1831, the reader is referred to a table given under Britain, at page 715, vol. I.

Regarding the character of the English, we venture to extract an estimate, which originally appeared in Blackwood's Magazine for 1829.

The Saxons of England exist nearly pure on its eastern coasts, are extensively spread over the whole of its surface, and perhaps equal in number all the other races that enter into the composition of English population. The Saxon Englishman (for brevity, I may use only the latter name) is distinguished from other races by a stature rather low, owing chiefly to the neck and limbs being short, by the trunk and vital system being large, and the complexion, irides, and hair light; and by the face being broad, the forehead large, and the upper and back part of the head round, and rather small. In his walk, the Englishman rolls, as it were, on his centre. This is caused by the breadth of the trunk, and the comparative weakness of the limbs. The broader muscles, therefore, of the former, aid progression by a sort of rolling motion, throwing forward first one side and then another. So entirely does this depend on the breadth of the trunk, that even a temporary increase of it produces this effect. Men who become fat, and women who, having born many children, have the heads of the thigh bones farther separated, always adopt this mode of progression.

The mental faculties of the Englishman are not absolutely of the highest order; but the absence of passion gives them relatively a great increase, and leaves a mental character equally remarkable for its simplicity and its practical worth. The most striking of those points in the English character, which may be called fundamental, are cool observation, unparalleled single-mindedness, and patient perseverance. This character is remarkably homogeneous.

The cool observation of the Englishman is the foundation of some other subordinate, but yet important, points in his character. One of the most remarkable of these, is that real curiosity, but absence of wonder, which makes the "nil admirari," a maxim of English society. It is greatly associated, also, with that reserve for which the English are not less remarkable.

The single-mindedness of the Englishman is the foundation of that sincerity and bluntness which are perhaps his chief characteristics; which enables him so well for the business of life, and on which his commercial character depends; which make him hate (if he can hate anything) all crookedness of procedure, and which alarm him even at the insincerities and compliances of politeness.

The perseverance of the Englishman is the foundation of that habit which guides so many of his own actions, and that custom in which he participates with all his neighbours. It is this which makes universal cant, as it has been profanely termed, not reasoning; the basis of his morals, and precedent, not justice, the basis of his jurisprudence. But it is this also which, when his rights are outraged, produces that grumbling which, when distinctly heard, effectually protects them; and it is this which creates that public spirit to which, on great emergencies, he rises with all his fellow-countrymen, and in which he persists until its results astonish even the nations around him.

Now, a little reflection will show, that of the three fundamental qualities I have mentioned, the first seeming may easily be less amiable than the final result shall be useful. To a stranger of differently constructed mind, the cold observation, and, in particular, the slowness and reserve which must accompany it, may seem unsociable; but they are inseparable from such a construction of mind, and they indicate, not pride, but that respect for his feelings which the possessor thinks them entitled to, and which he would not violate in others. The dignity, therefore, which in this case the Englishman feels, is not hauteur; and he is as rarely insolent to those who are below, as timid to those who are above him.

In regard to the absence of passion from the English mind, it is this which forbids one to be charmed with music, to laugh at comedy, to cry at tragedy, to show any symptom of joy or sorrow in the accidents of real life; which has no accurate notion of grief or wretchedness, and cannot attach any sort of meaning to the word ecstasy; and which, for all these reasons, has a perfect perception of whatever is ridiculous. Hence it is, that, in his domestic, his social, and his public relations, it is perhaps less affection than duty that guides the conduct of an Englishman; and, if any one question the moral grandeur which this sentiment may attain, let him call to mind the example of it, which, just before the victory of Trafalgar, was given by Nelson in the simple and sublime communication to his fleet— "England expects every man to do his duty!" Which is the instance that equals this even in the forged records of Roman glory? Happily, too, the excess of hatred is so little known to the Englishman as excess of love; and revenge is abhorrent to his nature. Even in the pugilistic combat he shakes hands with his antagonist before he begins; he scorns to strike him when he is down; and, whether vanquished or victor, he leaves his antagonist neither cast down nor triumphant.

The extraordinary value of such a character is obvious enough. Rich, free, liberty and British commerce are its results; neither the Scottish nor Irish mind would have attained them.

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*The word must not here be understood as implying hypocrisy, of which the Saxon temperament is very innocent.*
ENGLAND, LITTLE—ENGLAND, NEW.

ENGLAND, LITTLE, beyond Wales, is a portion of country lying along the south-western coast of South Wales, remarkable for being inhabited by the descendants of a colony of Flemings, who came over from Flanders under king Henry I.

ENGLAND, NEW; the name of the North-eastern States of the North American Continent; New Brunswick, New Hampshire, New England, New York, Canada, E. by New Brunswick and the Atlantic, S. by the Atlantic and Long Island sound, and W. by New York. This division comprises the States of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut. Lon. 46° 49' to 73° 19' 0"; Lat. 41° 14' 60" to 45° 53' 11". Dollars, 1,671,974; in 1820, 1,669,793. By the census of 1830, the population of the United States was estimated at above 12,000,000; but the exact population of New England we have not ascertained.

The soil of this part of America is various, from barren sand to the richest clays and loams. It is generally better fitted for grazing than tillage. The most important production is grass. Beef, mutton, pork, butter, and cheese are abundant. Indian corn, rye, wheat, barley, and oats are extensively cultivated. New England is the most populous part of the United States. The inhabitants are mostly of English descent. There is no country in the world where education is so generally diffused among all classes of people. It is the most manufacturing part of North America. (See, among other articles, Cotton Manufacture.)

The statement of the secretary of the treasury, of the commerce of the United States for the year ending Sept. 30, 1829, gives the following results:—

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<th>New England States</th>
<th>Imports</th>
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<tr>
<td>Middle States, Ohio</td>
<td>14,382,55</td>
<td>10,754,739</td>
</tr>
<tr>
<td>&amp; New Jersey</td>
<td>50,657,191</td>
<td>90,598,729</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>9,443,181</td>
<td>31,645,203</td>
</tr>
<tr>
<td>Florida</td>
<td>7,429,297</td>
<td>73,358,671</td>
</tr>
</tbody>
</table>

The inhabitants of New England have several peculiarities, distinguishing them from the inhabitants of the other United States, owing to their descent from the Puritans, and other causes. In the other states, they are familiarly called Yankees (q. v.), which name, in Europe, is given to the citizens of all the United States. The Notions of a Travelling Bachelor, by Mr. Cooper, contains some good remarks on New England. The name of New England was once official. Thus a charter was granted to the first settlers at Salem, by the name of "governor and company of Massachusetts bay, in New England." The country was at first called North Virginia; but after captain Smith had surveyed it, and presented the map to Charles I., then prince of Wales, he gave it the name of New England. Sebastian Cabot discovered the coast of this region, and Plymouth, then called New Plymouth, in Massachusetts, was the first settlement here.

The first settlers landed Dec. 11 (old style), 1620. Before landing, they signed a solemn covenant, forming themselves into a body politic for the purpose of making equal laws for the general good. They were republicans before they landed, and have virtually remained so ever since—a circumstance always to be considered in comparing the American revolution with that of other countries. The republican spirit showed itself early at several periods. Charles II., after his restoration, sent commissioners to New England (in 1664) to inquire into and examine the state of the colonies, and to reform the administration of justice. There were six commissioners, and the commissioners above 1665, which will be found in Hutchinson's Collection of State Papers, &c., p. 412, &c., in which they give an account of the state of the colonies, and are particularly severe in their animadversions upon the colony of Massachusetts. Before that period, the judicial and other processes issued in some of the colonies of New England, at least in Massachusetts, had been in the name or under the authority of the colony, and not in the name of the king. The commissioners remark (p. 417), that "the colony of the Massachusetts was the last and the hardiest to use his majesty's name in the forms of justice." They also added (p. 417), that they visited all other colonies before this, hoping that the submission made, and mention of the other colonies to his majesty's desires would have abated the refractoriness of this colony, which they much feared. "They (the Massachusetts colony) proclaimed by sound of trumpet, that the general court (of the colony) was the supreme judicatory in the province; that the commissioners pretending to hear appeals was a breach of their privileges granted to them by the king's royal father, and confirmed to them by his majesty's own letter, and that they should not permit it." (p. 418) "They say that King Charles the First gave them power to make laws, and to execute them. They had a warrant against himself and his successors, and that so long as they pay the fifth part of all gold and silver ore which they shall get, they shall be free to use the privileges granted them; and they are not obliged to the king, but by civil laws. (p. 420). They further added—that "they (the Massachusetts colony) did solicit Cromwell, by one Mr Winslow, to be declared a free state, and many times in their laws styling themselves 'this state,' 'this commonwealth,' and now believe themselves to be so." (p. 420) They close by remarking, "Their way of government is communistic; their way of worship is rude, and called Congregational; they are zealous in it, for they persecute all other forms." (p. 422). The declaration of the general court (of the colony) of their rights under the charter in 1661, strongly supports the views which the commissioners gave of the claims of Massachusetts. (1 Hutch. Hist. Mass. supplement, vol. 13, p. 529.) These documents abundantly prove how early the colony aspired to substantial independence, and how slowly it allowed the interposition of the king in any of its internal concerns, and how jealous it was of every exercise of prerogative.

A people so alive to their own rights, and so persevering in maintaining them, could not fail of being involved in disputes with the government of Great Britain from a very early period in their history. Down to the annulment of their first charter, and the grant of their new charter by William and Mary in 1692, there was scarcely any harmony between the government in England and that in the Massachusetts colony. In 1643, four of the New England colonies, Massachusetts, Connecticut, Plymouth, and New Haven, on account of the dangers from the Indians, from the Dutch at New York, and from the French in Canada and Acadia, entered into a league offensive and defensive. By the articles of this confederacy, each colony was to appoint two commissioners, who were to assemble alternately in the respective colonies, and were empowered to enact ordinances of general concern; and, in case of invasion, each colony was bound to furnish a certain quota of men and money. See Hubbard's Hist. of New England; Hist. of New England, by Hannah Adams; Hutchinson's Hist. of Massachusetts; Prince's New England Chronology; Tutor's Letters on the Eastern States; Dwight's Travels in New England.

*See 1 Hutch. Hist. of Mass., 523, 233, note. Id. 452.
ENGLISH CHANNEL (called by the French in Manche) is that part of the Atlantic ocean which lies between the north-west coast of France and the southern coast of England. Its eastern extremity is comprised between the north headland of Calais, and in the west it is imperceptibly confounded with the Atlantic ocean. It lies between lat. 48° 38' and 51° N., and lon. 1° 20' E. and 5° 43' W. At its termination—on a line drawn from Land's End to the extreme easterly point of the Channel—its breadth is about 50 leagues wide. On the French coast, it forms three considerable bays; the most easterly receives the Somme; the second receives the Seine and several smaller rivers; the third and largest lies on the south-west of the peninsula of Cotentin. On the English coast, is Mount Bay, between Lizard Point and Land's End; between Lizard point and Start point is a large gulf, on which are situated Falmouth and Plymouth; the gulf of Exeter lies on the east of Start point. The principal islands in the English channel are the Isle of Wight on the English coast, and the Norman islands lying opposite to the English coast; the principal of which are Guernsey and Jersey. The prevailing winds are from the west. The channel, being shallow and confined, is subject, from its communication with the Atlantic, to high and impetuous tides. Its waters contain many fish, of which the most important is herring. The herring. The oysters of Cancale are also famous.

ENGRAVING is the art of representing, by means of lines and points produced on a metallic surface by cutting, by the aid of an instrument called a graver, the figures, lights, and shades of objects, in order to multiply them by a printing press. This is the limited sense of the word, but it is now used in a more comprehensive sense, and includes all objects depicted on copper, steel, or other metal, whether produced by means of cutting or corrosion. The engraver is to the painter what the translator is to the author. As it is impossible to give a spirited translation of a work of genius without a portion of the author's fire, so it is essential to a good engraver that he should feel and understand the character of his original, and be initiated into the art of drawing, that his copy may be at once correct and artistic. In the execution of this art, the larvge mass of mankind must have remained ignorant of the inestimable pictures of all the great masters; and by its process of multiplying, one can now enjoy a representation of them in our homes.

The art of engraving on copper was invented in Europe in the first half of the thirteenth century. The Chinese seem to have been acquainted with it long before. The Dutch, the Italians, and the Germans, compete for the honour of its invention in Europe. It is known that the art was exercised by the Italian Finiguerra as early as 1400. The oldest print, bearing a date, is of the year 1401. The inventors of it were the goldsmiths, who were in the habit of making devices on their wares; and these, being often executed with much elegance, excited the desire to multiply copies by transferring them to paper. Engraving differs from printing in having its subjects cut into a hard surface, instead of being raised above it, as is the case with types and wood cuts. Many metals and alloys have been employed for the purpose of engraving. The most common is copper, which is soft enough to be cut when cold, and hard enough to resist the action of the press. We have already seen the methods of executing different descriptions of engraving. The graver, an instrument of steel, is principally used in engravings on copper and steel; it is square for cutting broad lines, and lozenge for the finest, and must be tempered to that exact state, which will prevent the point from breaking or wearing by its action on the metal. The graver is inserted in a handle of hard wood, resembling a pen with a longitudinal slit, through which the point, after having been sharpened on the oil-stone, is fixed; and the handle is so cut as to use it flat on the plate, his fingers and thumb being placed on each side of the handle, but never extending round to the belly or cutting part of the graver, which must always be pushed forward in a direction nearly parallel to the surface of the plate. The end of the handle leans against the back part of the palm of the hand, by which it is forced forward, in such a manner as to cut a line of the depth required. The scraper is a long, triangular piece of steel, tapering gradually from the handle to the point; the three edges produced by this form being sharpened on the oil-stone, are used for scraping off the roughness or barb occasioned by the graver, and also for crossing erroneous lines. The burnisher is a third instrument of steel, hard, round, and highly polished, for rubbing out punctures or scratches in the copper. The oil-stone which engravers have found best for polishing the copper plate or to burnish, is Turky stone, but some use a hone for sharpening the belly of the graver, and also for giving a finer edge to the scraper. The etching needle or point, is used either for etching lines on a ground, which are afterwards deepened into the metal by corrosive acids; or it is used for producing the more immediate lines of the herring, which is termed dry-pointing. It is held in the fingers in the same way as a pen or pencil. Another instrument of great importance is the parallel square or rule. This is not only used for ruling a succession of straight lines, in the operation of etching or dry-pointing, but also for waved or curved lines. It serves as a guide, and contributes in an eminent degree to steady the hand. Various kinds of varnish, resin, wax, charcoal, and acids, are also employed in different parts of the operation, according to the subject, and the style of engraving which is adopted. The first which we shall describe is Etching.—The art of etching was discovered some time after that of engraving. In the earlier state of engraving, the subject to be represented was drawn in outline on a piece of paper, with a black lead pencil, and then transferred to the surface of the copper, silver, or steel plate by rubbing or polishing by first heating the metal, and then rubbing its surface over with a thin coating of bees' wax, and when the metal had become quite cold, the pencil outline was laid on it, and rubbed on the back with a burnisher, until it was transferred to the surface of the metal. The outline was then scratched on the metal with an etching point, or needle, the wax rubbed off, and the subject finished with a graver. This process is still adhered to in the engraving of letters, silver plate, &c. After the invention of etching, however, this practice was discontinued by the French, Italian, and English artists, who have long been in the habit of commencing all engravings by the more speedy and free process of etching.

Etching is the art of giving a pictorial representation of any object on a metal plate, on which a ground has been previously laid, capable of resisting the action of acids. This ground consists of the following composition: white wax, 2 oz.; Burgundy pitch, ½ oz.; black pitch, ½ oz.; and asphaltum, 2 oz. The three former are put into a crucible, and melted over a slow fire, and the asphaltum, after having been reduced to a fine powder, is then added, being the composition stirred round until this is well mixed. Then these substances, if properly incorporated, the ground is poured into cold water, and formed into balls about the size of a walnut, and each rolled into a piece of silk, ready for use. In laying the ground,
a hand-vice is fixed to the edge of the copperplate, with a small folded bit of paper on the front to prevent the face of the plate from being injured by the vice. The plate is then heated, either by holding it under a lamp or by means of a small smoothing iron, which has been heated, or by burning paper under it; care must be taken not to render it too hot, but only sufficient to melt the ground properly, which is now rubbed over the surface of the plate, when it will ooze through the silk in which it is wrapped. The ground is then properly equalized over the whole surface, by means of a dauber. When this is accomplished, the plate is held with its face undermost, and the whole surface smoked with a candle, until it is quite black. This is performed by shaking the candle pretty quickly to and fro to prevent the flame from resting on any part of the ground, which would burn it, and render it unfit for etching. But notwithstanding the utmost precaution, parts will frequently be burned. These are known by being dim and of a smoked appearance; in general, however, they can be removed by heating the plate. When the ground is cold before the operation of smoking is commenced, it is very apt to burn; to prevent this, after the ground has been laid with the dauber, it ought to be gently heated before smoking, unless the artist is quite certain that it is sufficiently warm. The purpose of smoking is to confine the ink to a harder ground, lines more apparent during the operation of etching.

The dauber is constructed in different ways. Lamb's wool is properly washed and dried, and rolled into a piece of fine muslin, and made the shape of a flattened ball, tying the edges of the muslin so as to answer the purpose of a handle; over this is neatly and smoothly tied a piece of black silk. The silk must not be tooled, as it is apt to render the ground unequal. Another method is to have a piece of tin two inches and a half diameter, and let the wool be placed on one side, over which tie the muslin, and confine the wool to the circumference of the tin by means of a thread drawn round it. The silk is then put on and pulled in all directions, so as to render the front of the dauber quite smooth, like a printer's ball. This method preserves the elasticity of the dauber much longer than when made the more simply.

The next thing is to transfer the outline of the subject to be represented, to the surface of the ground. This can be done in two ways. First, by tracing with a black lead pencil an outline on a piece of dry oiled paper, which is called tracing paper. A sheet of writing paper is then rubbed over in one side with red chalk, or, as a substitute for it, common chalk or pipe-clay. The chalk is scraped down over the surface, in a fine powder, and rubbed hard over the paper with a rag; because, if left too thick, it is apt to make a clumsy outline. This paper is then put with the chalked side on the copper facing the ground, and fixed either by folding it behind the plate, or attaching its edges to the corners with a little rosin or the composition used in bitting. The tracing is then fixed to the paper by the same means. If the picture is wished to be the same as the drawing from which it is to be copied, it must be placed the reverse way upon the plate; and if the reverse, it must be etched as it is drawn. A blunt etching needle or point is then taken, and the whole outline is run over, taking care that such pressure only is used, that the outline is impressed upon the surface of the plate. When the lines are deeply engraved by it, they are now removed from the surface of the copper, and the etching proceeded with. Another mode of transferring the outline on the plate is to fix it as above described, after having dumped the tracing paper, and then pass it through the roller press used for printing copperplates. Two pieces of paper are then rolled up into flat bearers or supports about an inch in breadth, and so thick as to prevent the ruler or board which the hand must be held over, from getting too close to the plate, to break the ground. The outline and shadows must now be produced on the copper with the point; every line must be kept separate and the ground must be fairly removed from the surface or the copper, which ought to be slightly scratched by the point. The more distant and delicate parts are etched with a fine point, while those that are either more near or bolder, must be etched with a broader point. The lines ought all to be drawn from left to right, and as much dependence placed on the use of the ruler as possible for directing the hand, by which means greater and more uniform pressure can be used, and the lines rendered more equal and regular. As before noticed, almost every engraving is partly etched, and we have given an example, plate xxxv. fig. 1, of the quantity of etching employed in engraving a figure, by one of the best living engravers, viz., Mr John Coney, the engraver of the printed portrait of the Jew's Harp, after Wilkie. In a regular engraving the lines are equal and lying in corresponding succession; upon this as well as the disposition of these lines, much of the excellence of the print depends. Within the last few years a much more simple method has been introduced than was formerly employed, less attention being paid to the making out of the parts in landscape; and hence, there is less mannerism in the works of the living artists in that department. The whole subject being now etched, the next thing to be attended to is the biting of the lines, or corrosion, so as to render the lines sufficiently deep for retaining ink. The whole margins of the plate, and such parts of the ground as are broken, must be covered with a thin coating of turpentine varnish, to prevent the action of the acid on them. A border of wax half an inch high is put round the plate, for the purpose of containing the acid while biting. This wax is composed of bees' wax, common pitch, Bur- gundy pitch, and sweet oil, melted in a crucible, and poured into cold water.

Corrosion or biting is performed by means of diluted nitrous acid, in the proportion of one part acid to four parts water. The more the lines, or the places require the acid to be applied to them for a shorter time. They are consequently first stopped up with varnish, which is allowed to dry, and the acid again put on, and allowed to remain till the middle tints have acquired sufficient depth, when they are stopped up. The application is thus successively repeated till the darkest parts are produced. To know when a part is bit sufficiently deep, a small portion of the ground is scraped off; but those who are practised in biting can generally ascertain this without scraping. The ground is now removed by heating the plate, and rubbing tallow or oil over it, till wiped off with a rag; or it can be removed without heating the plate, by washing it with turpentine. When the artist is dissatisfied with any lines he may have etched, these can be stopt up and re-etched by taking a camel-hair pencil dipped in turpentine, and a little etching ground softened with it, and the part covered with this, which will completely conceal the former lines. In the operation of biting, as soon as the acid begins to affect the copper, small bubbles of air will be seen rising upon the lines; these consist of fixed air or carbonic acid gas, and must be carefully removed by it.

When it happens that any of the parts of the etching are wished darker, this can be accomplished by what is termed re-biting. This is done by laying a thin ground without smoking it, over the plate, taking
care that none of the ground gets into the lines, to fill them up. The acid is then applied as before, until sufficient strength is obtained.

Painters have been long in the practice of etching, and we have in a free manner, so as to produce an effect, without any attention being paid to the regularity of lines as in an engraver's etching. The process is exactly similar to that practised by engravers. We have given an example of a painter's etching, plate xxx, fig. 3. The object having been forwarded by means of etching, as we have above described, and represented, plate xxxv, fig. 1, the process is completed by engraving. This is executed by an instrument called a graver, which is either square or lozenge, according to the work for which it is to be used. The quantity of work executed with this instrument, will be seen by comparing the figures No. 1, and No. 2. The former is an exact copy of what is termed an aquafortis proof, and the latter from a finished impression of the print. In the operation of cutting the lines with a graver, there is a part of the metal thrown off, which must be removed by the scraper. Lines in an historical piece or portrait are not cut to their depth or thickness at once, but are produced by being frequently re-entered with the graver. This not only gives clearness, but also depth of tone, and regularity of line. The first cuts made on the graver receive the greatest laying of the shadows; all the effect being produced by the finishing. To facilitate the progress of the work, where depth of tone is required, those parts are subjected to the operation of re-bitting; by which means, in the course of an hour or two, an effect may be given to the work, which would have taken some time by the more tedious use of the graver. To see the state of the engraving without an impression, an oil rubber, with black in it, is used, with which the lines are filled up; and a pretty good idea of the effect may be ascertained. The more delicate parts of an engraving are generally done in dry point, that is, by means of the etching needle pressed into the copper, so as to produce the depth of line required, and the burr afterwards scraped off.

If the engraver makes a mistake, or changes his mind, respecting any part of his work, this can be remedied by scraping it out, or concealing it by burnishing firmly; and shall it too deep, it can be polished with charcoal and water, and afterwards rendered more smooth with the burnisher. But if the part taken out is strong, it will, in all probability, be below the surface of the plate. In which case it must be struck up; by marking the exact size and situation of the hollow, on the back of the plate, by a pair of callipers, and placing the face of the plate, on a finely polished steel anvil, beat it up with a small hammer, to the level, from behind.

In the process of engraving, a shade of tissue paper is used, to prevent the reflection of light from the copper into the eyes. This is made by pasting paper on a hollow stretching frame, which is placed with its base near the till of the window, while the top part projects obliquely into the room. This is, however, quite unnecessary in etching. An experienced eye can, at once, detect which lines have been etched, and which have been produced by the graver. The former are always more or less serrated on their edges, while the latter are clear and smooth. Most engravers use a glass, both in etching and finishing their plates.

**Engraving in Outline.**—This method is well adapted for the representation of gems and statuary, where a likeness of an object is given, and where it is desirable to avoid the expense of a finished engraving. We have given a representation of this outline, plate xxxv, fig. 7. It will be noticed that, as a substitute for shadows, a stronger line is cut, which also takes off from the tameness of a uniformly thick line. Outline may either be executed by first etching the line to be cut, and then curving the stronger lines with the graver; or it may be done by laying the subject to the copper by means of a wax ground, and the outline scratched with the point, as in writing, and then cut with the graver.

**Steel Engraving.**—The number of good impressions which a steel may be thrown off from an engraving on copper, seldom exceeds one thousand to fourteen hundred, depending on the execution of the subject. Within these few years, steel has been used instead of copper, and this invention has tended more than any other to advance the fine arts. From a well executed steel plate from forty to sixty thousand good impressions may be thrown off. This valuable discovery was made by an American engraver, of the name of Perkins. This gentleman has not only the merit of this invention, but also of producing, from a single engraving, a number of other plates. He can, without much trouble, obtain from one engraving any required number of plates, all of which are equal to the original, and by which millions of impressions may be produced. The process of multiplying engravings, etchings, or engine-work, is as follows:—Steel blocks or plates, of sufficient size to the engraving to be engraved, have their surfaces softened or decarbonated, and then render a better material for receiving all kinds of work than even copper itself, which, heretofore, was considered the best metal for the purpose. After the intended engraving has been executed upon the block, or plate, it is then hardened with great care by a new process which prevents anyultimates injuring the most delicate work. A cylinder of steel, previously softened, is then placed in the transferring press, and repeatedly passed over the engraved block, by which the engraving is transferred in relief to the periphery of the cylinder; the press having a vibrating motion equalising that of the cylinder upon its periphery, by which new surfaces of the cylinder are presented, equal to the extent of the engraving. The cylinder is then hardened, and is employed to indent copper or steel plates, with engravings identical with the same, or upon the original block; and this may be repeated. If desired, as the original engraving will remain from which other cylinders may be impressed, if required. **Stipping.**—This is engraving in dots in place of lines. There are two ways of executing this species of engraving. The first is by pursuing the same process as in an etching, and having the subject transferred to the plate. The outline and part of the shading is executed with an etching point, and then bit, as described in etching. When the ground is removed, the engraving is completed with the graver. The dots produced by the point are necessarily round while those made by the graver are somewhat rhomboidal, or slightly triangular, depending on the kind of graver which is used. If engravings of this kind are examined by means of a lens, it will be found that what appears a single dot to the naked eye, consists of a number of very minute dots. This gives to the engraving that beautiful softness which is observable in the works of Ryland, Freeman, and other first rate stipple engravers. This kind of engraving is more tedious in its execution than line engraving, and hence more expensive. Stipping has much softness and resembles a drawing; indeed, when printed in colours, engravings of this kind very closely resemble colours being given, and in the coarser kinds of work, an instrument has been devised for producing dots in a more expeditious
manner than by the point or graver. This is called a roulette, a kind of toothed wheel, resembling a spool moving in a groove, and leaving these two or eight rows of points; so that by running this along the face of the plate, a large surface or shadow can be produced in a very short time. This is, however, quite inapplicable to the finer kinds of work, as the mechanical regularity of the dots cannot be condensed, the distance is comparatively great, and the force of the instrument is not sufficiently exerted. If, however, the whole or more of the impressions, which, if covered with ink and printed, would present a perfectly black impression upon the paper. Some modern artists have found that it is much more easy and expeditious to grain the plate by only bringing the grounding tool twice over it. This practice produces a much more dotty and richer effect, and saves half the time besides. No outline is made on the copper, but the picture is divided into squares, and a similar number of smaller lots drawn on the copper with a black-lead pencil. This is the most tedious part of the process. The rest, to a skilful artist, is much more easy than line-engraving or stippling. It consists in pressing down or rubbing out the roughness of the plate, by means of the burnisher and scraper, to the extent of the intended figure, obliterating the ground for lights, and leaving it for shades. Where a strong light is required, the whole of the ground is engraved; but where a medium light is moderately burnished, or partially erased. For the strongest shades the ground is left entire. Care is taken to preserve the insensible gradations of light and shade, upon which the effect and harmony of the piece essentially depend. Engraving in mezzotinto approaches more nearly to the effect of oil paintings than any other species, from the strong and broad effects of light and shadow which it is capable of producing. It is well calculated for the representation of obscure pieces, such as night scenes, &c. The principal objection to the method is, that the plates wear out speedily under the press, and, of course, yield a comparatively small number of impressions. But, since the use of steel plates has been discovered, a much greater number of impressions can be taken off, although much fewer than in line and other engravings. We have given a representation of this style, pl. xxxv, fig. 6.

Etching with light ground. Common etching ground is taken and rendered soft by the admixture of an equal quantity of oil or tallow. A ground is then put on the plate with a dauber, in the same manner as in common etching. When cold, a piece of silk is drawn tightly over the surface of the plate, and above the plate is placed a mass of white paper. For the subject to be represented is drawn on the paper by means of a hard black-lead pencil, while strong pressure is used. By this means the ground adheres to the silk, and leaves the copper exposed; so that, by being subjected to the process of biting, a picture is produced, wherein the lines are very soft, having all the appearance of a drawing in black chalk. This process may be applied to either landscapes, figures, or, in short, anything else; and, from the rapid manner in which it can be executed, is useful in giving representations of subjects where a large surface requires to be covered. See plate xxxv, fig. 4.

Engraving in Wood has been practised for several centuries, and originally with tolerable success; it languished for a great part of the eighteenth century, but revived towards the close, and is still practised in a manner which reflects credit on the ingenuity of the age. The person to whom we are most indebted for its restoration was the late Thomas Bewick, of Newcastle-upon-Tyne. The fidelity of expression and drawing, in his History of Quadrupeds and British Birds, attracted universal admiration; and, although these have been excelled, in point of execu-
tion, by more modern artists, yet they have never been surpassed in accuracy of drawing, and the characteristic portraiture of the animals. The lines, instead of being cut into the substance, are raised, like the letters of printing types, and printed in the same manner. The wood used for this purpose is box, which is preferred for the hardness and closeness of its texture. It is cut across the grain, into pieces of the height of common types, that the engraving may be made upon the end of the grain, as it is impossible to cut lines running with the grain or thread of the wood. For the coarser kinds of work, plane-tree, and even beech, are used; but these have neither firmness of texture nor hardness of substance for the finer engravings. The surface must be planed smooth, and the design drawn on it with a black-lead pencil; the graver is then used, the finer excavations which are intended for white interstices between the black lines are produced by cutting lines on the surface of the wood, and the greatest lights are made by cutting away the wood entirely of the intended form, length, and breadth; but the deepest shades require no engraving. The most difficult part of this art is the production of black lines crossing or intersecting each other; which will be better understood by an examination of the following wood-engraving of a boy writing:

These black lines will be noticed in the shadow beneath the chin on the left side, and also on the knees and left angle. They can only be executed, with great labour, by picking out with the graver the interstices between these raised black lines. Crossing with white lines, on the other hand, is very easy; a slight specimen of it will be noticed in the under side of the shadow of the pedestal. These are produced by simply cutting lines across with the graver. Some have imagined that the earlier engravers on wood had some mechanical and easy contrivance for the production of black cross lines, from the great quantity of these to be met with in their works; more particularly in the prints of Albert Durer. Much of the beauty of this kind of engraving depends upon the printing. A recent improvement has been made in wood engraving, which is this: The blocks are prepared as before, and covered with flake white. The drawing is then made on this, and the wood engraver has only to cut out the lights. The beautiful wood cuts, executed by Branston and Wright, for the Tower menagerie and Zoological gardens (after designs by Harvey), recently published in London, are executed in this manner, and are the finest things of the kind which have been executed in any country. Wood engravings have this advantage, that they may be inserted in a page of common types, and printed without separate expense. They are very durable, and may be multiplied by the process of stereotyping. The tools used in this art are very varied, such as chisels, both flat and hollow, as also round, for cutting out the back-grounds, and common gravers, graving-knives, and knife-grooves for executing the lines.

Coloured Engravings. Coloured engravings are variously executed. The most common are printed in black outline, and afterwards painted separately in water-colours. Sometimes a surface is produced by aquatint, or stippling, and different colours applied in printing, to different parts, care being taken to wipe off the colours in opposite directions, that they may not interfere with each other. But the most perfect as well as the most elaborate productions, are those which are first printed in colours, and afterwards painted by hand.

Engravers, Modern. Among modern nations, the Italians, French, Germans, and English have rivalled each other in producing great works in the department of engraving; but, on the whole, the superiority seems to belong to the British both for the number of their artists and the value of their works. The French are more particularly famous for the excellence of their impressions. Many great works, executed in Germany, are sent to Paris to be struck off. In Germany, Frederic von Muller, whose Madonnas di S. Sisto is still a jewel in collections, died too early for the art. C. Bald distinguished himself by his engraving of Fra Bartholomew's Presentation of Christ in the Temple, and of Raphael's St Margaret. K. Hess, Reindel, Umer (lately deceased), Leybold, Lutz, and A. Kessler have produced fine cabinet-pieces. John in Vienna, Kobell in Munich, Burch, Amsler and Rushwey in Paris, are distinguished in different branches. Chadowerick, Banse, Bolt, Clemens, Gmelin, and many others, have contributed much to advance the art of engraving. In general, it may be mentioned as a favourable sign of the times, that all the first artists in Germany apply their talents to great works, whilst the taste for souvenir engravings seems rapidly dying away. Those engravers who have produced the best plates for scientific works, so very important a branch of the art, and those in the department of geography, would deserve to be mentioned if we had room. Hence engraving gained her early fame, in the art of engraving, down to the most recent times. The engravings of A. Boucher-Desnoyers (for instance, the Madonna di Foligno, La Vierge, dite La Belle Jardinière, Francis I., and Margaret of Navarre, Plaude and Hippolyte, the portrait of the Prince de Benevento) are acknowledged masterpieces. Ligonn's St Cecilia from Domenichino, his Atala, his portrait of Mademoiselle Mars; Massard's St Cecilia of Raphael, and Apollo with the Muses of Giulio Romano; Richomme's, Dien's, Girodet's, Gudin's, Aubouin's plates, no less magnificently than carefully executed; Jael's large pieces in aquatinto (for instance, from the paintings of Verney) all manifest how rich France is in great engravers. Neither ought we to forget the magnificent literary works, almost constantly published in France, which owe their ornaments to the skill of French engravers. In the most recent productions of the French engravers, an imitation of the school of Morghen is observable; whilst some young Italian and German artists have aimed at something higher than even Morghen's productions. Since the art of painting has ceased to produce many works worthy of multiplication by the burn of the first engravers, these have occupied themselves chiefly with ancient masterpieces, and engraving has taken a higher station among the fine arts. Morghen, the pupil of Vo-
ENGRAVING.

45

pato, and those who have followed him, have produced works before unequalled. The Milanese school of engravers in particular, has reached a degree of perfection, through Anderloni and Longhi, which may be called perfect, in regard to its picture-like effect. Bettelini, Bonato, Gandolfi, Gara-vaglia, Fontana Rossaspina, Benoglio, Giliberti, Palmerini, Poporati, Pavon, (by birth a Spaniard, however,) Rainaldi and Rampoldi have produced beautifully finished engravings; and Luigi Rossini and Pinelli have etched scenes full of life. Splendid works, in which typography and chiaroscuro unite their attractions, have appeared at Florence, Venice, Rome, and Milan. But England is richer in such works than all other countries. The productions of Earlom, Fether, Dixon, Green, are much esteemed. John Smith, too, has been distinguished in works of art, as engraved, but his figures of his day, and distinguished himself in his copies from the ancient masters. He had the merit of producing as a pupil William Woollet, the most eminent engraver which had appeared down to his own time, his works being excellent, both in landscape and in portrait, Carle van Loth, and John H. Eneas, as a landscape, and his immortal print of The Death of General Wolfe, after West, the finest historical engraving which had then been executed. So highly was it valued, that proof impressions have been known to bring from £50 to £40 at sales. The prints of William Sharp and James Heath, were, and are still held in high estimation; they excelled in figures of a large size, while Ningle, Anken, Smith, and Charles Warren, became distinguished for the beauty and excellence of smaller figures. All these were confined to the metropolis of Britain, but contemporary with them sprung up a solitary individual of distinguished taste, in Edin-

burgh, the present Robert Scott. His merit became known in London, and Warren associated himself with him. In some of the beautiful illustrations for Cook’s edition of the British poets, Warren engraved the figures, and gave the landscape; they excelled everything of the kind which had before been executed in any country. Mr. Scott, in addition to his own claims as an engraver, has the merit of having been the master and teacher of, perhaps, the greatest engraver which has ever appeared, namely, John Burnet; whose prints, after Wilkie, in all that appertains to the art of engraving, excel every other which have yet been executed. This eminent individual not only ranks at the head of his profession as an engraver, but stands high as a painter, as his Greenwich Pensioners, and other paintings, sufficiently demonstrate. Scott has also the merit of having taught James Stewart, and John Horsburgh, both eminent in their profession. Charles Heath has long stood high as a figure engraver. We have now in the same department, Edward Finden, the first living artist for small figures, and a host of others; while in small land-

scapes, William Miller of Edinburgh, stands at the top of the tree. Holloway’s plates taken from Raphael’s cartoons, in Hampton court, are praised as high specimens of the art.

With the Dutch, the burin is, at present, not very successful; though they are the former school of Pontius and Edelinck. But for picturesque etchings and productions by the needle, the skill formerly displayed has been preserved by Troostwyk, Van Os, Overbeck, Jansen, Chalon, and others. For more highly finished productions, in which the graver and needle must unite, in order to produce a tone, as in the engravings of Rembrandt’s pictures, Claessens and De Frey are acknowledged masters. While the Swiss have produced works which are admired, among the others, the Dutch have produced in this branch, is not unworthy of notice. The engravings of Switzerland, mostly in Abergi’s manner, form a class by themselves. In the United States, engraving has been cultivated with more success than any other department of the fine arts, though it cannot be expected that a country so young, and so distant from the numerous productions of former ages, should rival the great works of the art in Europe. But small engravings, particularly on steel, for souvenirs, have been produced, which may be compared with European pro-

ductions of the kind. Among American engravers, Longacre, Kelly, Durant, Danforth, (now in London), Cheney, Gallaudet, Ellis, Hatch, and others, well deserve to be engaged on subjects of more permanent interest than Souvenir engravings. Of the European artists who have been most distin-

guished in this art, we may mention the names of the Sueurs, Jackson, Moretti, Cansosi, Roger, Cargon, Papillon, Benuet, Dugoure. Among the most famous of the living artists in this line, in England, are Thomson, Brinston, Wright, Bonnier, Slader, Sears, Nesbit, Hughes, and the name of the late Mr. Clemen. In the United States, Mr. Wilson, the highest respect. In the United States, Anderson, Adams, Mason, Fairchild, Hartwell, and others, are distinguished. After the art of engraving in mezzotint was introduced into England, by Prince Rupert, it was carried to much perfection there. John Smith, who lived towards the end of the seventeenth century, has left more than 500 pieces in this style. He and George White formed a new epoch in the art, which the latter particularly improved, by first etching the plates, whereby they acquired more spirit. Of late years, many artists in England have devoted themselves to this branch; among these are Mr. Ar-
dell, Houston, Earlom, Fether, Green, Watson, Dickinson, Dixon, Hudson, J. Smith, Hogets, &c. For a list of the most distinguished engravers, from the earliest times, see Elmes, Dictionary of the Fine Arts, article Engraving. In England, the use of Stones is accomplished with the diamond or emery. The diamond possesses the peculiar property of resisting every body in nature, and, though the hardest of all stones, it may be cut by a part of itself, and polished by its own particles. In order to render this splendid substance fit to perform the operations of the tool, two rough diamonds are cemented fast to the ends of the same number of sticks, and rubbed together till the form is obtained for which they are intended; the powder thus produced is preserved, and used for polishing them in a kind of mill furnished with a wheel of iron; the diamond is then secured in a brass dish, and the dust, mixed with olive-oil, applied; the wheel is set in motion, and the friction occasions the polished surface so necessary to give their lustre due effect. Other stones, as rubies, topazes, and sapphires, are cut into various angles on a wheel of copper; and the material for polishing those is tripoli diluted with water. A leaden wheel, covered with emery, mixed with water, is preferred for the cutting of emeralds, amethysts, hyacinths, agates, granites, &c. &c.; and they are polished on a pewter wheel with tripoli; opal, lapis lazuli, &c., are polished on a wheel made of wood. Chrome is used for those stones which turn metals, in which the substance to be wrought is fixed in the lathe, turned by it, and the tool held, to the substance, the engraver of the crystal, lapis lazuli, &c., fixes his tools in the lathe, and holds the
precious stone to them, thus forming vases, or any other shape, by interposing diamond dust mixed with oil, or emery and water, between the tool and the substance, as often as it is dispersed by the rotary motion of the former. The engraving of armorial bearings, single figures, devices, &c., on any of the above stones, after they are polished, is performed by means of a small iron wheel, the ends of the axis of which are received within two pieces of iron, in a perpendicular position, that may be closed, or otherwise, as the operation requires; the tools are fixed to one end of the axis, and screwed firm; the stone to be engraved is then held to the tool, the wheel set in motion by hand, and the figure gradually formed. The material of which the tools are made is generally iron, and sometimes brass: some are flat, like chisels, gouges, ferules, and others have circular heads. After the work is finished, the polishing is done with hair brushes fixed on wheels and tripods.

ENGROSSING, in law, denotes the writing a deed over fair, and in proper, legible characters; also, the getting into one's possession, or buying up large quantities of corn, or other provisions, with the intention of selling them again.

ENHARMONIC: the epithet given, by the ancients, not only to a part of their three genera, which consisted of quarter tones, and major thirds. They however, had originally another kind of enharmonic, more simple, and easier of execution than this, and upon which the quarter tones or diesies were considered, by the theorists of the old school, as innovations too refined and artificial. In our common keyed instruments, such as the piano forte, the octave is divided into 12 semitonic intervals, the sharp of one tone being regarded as the flat of the next above. This causes an error of a quarter tone on the enharmonic interval in the compass of the octave, which may be easily proved on the piano forte. Thus, tune a perfect major third from C to E, and another third from E to G, sharp, then will the G sharp be a perfect major seventh to A, in the scale of C, A being the major sixth to C. Again, if A flat be tuned a major third below C, it will be true as a perfect fourth in the scale of E flat, which is the third minor flat. We have now perfect tuning in a sharp, and A flat, which ought to coincide, if the scale consisted of twelve equal intervals, but on trial they will be found to differ by a quarter tone on the enharmonic interval. It is the existence of this interval which causes those slight deviations from perfect chords in the tuning of keyed instruments, called temperament.

The defect of the organ arising from the occurrence of the enharmonic interval has been the subject of much discussion among musicians, and several attempts have been made to procure perfect harmony, by the introduction of new tones and keys. Very recently an enharmonic organ has been constructed by Robson and Son, of London, which has called forth a very valuable paper in the Westminster Review for January 1835. In that paper, the writer, in order to explain the nature of the enharmonic organ, lays down what he denominates the Normal scale, in which he gives the numerical value of the various intervals in the octave, regarding it as divided into fifty-three equal parts; before giving which, however, it will be necessary to observe that the dissonances, i.e. the major and minor second and major and minor seventh are double, or have sometimes an acute and sometimes a flat form, the difference being a comma. The acute form makes just concords with the third and fifth, and the grave with the fourth and sixth.

The value of the intervals are:

<table>
<thead>
<tr>
<th>Key note</th>
<th>0</th>
<th>9</th>
<th>5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor second</td>
<td>14</td>
<td>5</td>
<td>6th</td>
</tr>
<tr>
<td>Major second</td>
<td>6</td>
<td>5</td>
<td>7th</td>
</tr>
<tr>
<td>Major third</td>
<td>17</td>
<td>4</td>
<td>8th</td>
</tr>
<tr>
<td>Fourth</td>
<td>22</td>
<td>3</td>
<td>9th</td>
</tr>
</tbody>
</table>

The dissonances marked †, however, have less usual forms, which may be expressed by the numbers in order, 6, 9, 44, 47. The compass of the instrument is three octaves, terminating in G alto, having three stops and as many finger-board octaves. The lowest is employed for the key of C, the paddle of the tonic being red. The more ordinary forms of the dissonances have paddles in their usual places on finger-boards; the acute forms are white, and the grave black, so that they are to be taken of the same colour as the notes with which they are to make perfect concords. The second finger-board is adapted to the key of G, and the third to that of E; and, in order to extend the power of the instrument to other keys, there are introduced in all the three boards additional notes, having finger-keys, in form similar to those on a flute, by which the performer can take any key from four flats to five sharps.

We embrace this early opportunity of laying before our musical readers a new, and extremely simple method, never before published, of the transposition of regular and irregular keys, discovered by the Rev. T. Gordon of Falkirk, and which leads to conclusions illustrative of the enharmonic interval. The account we give in his own words.

The principle on which this method is founded, may be thus stated:

All keys with sharp signatures ascend in the natural forward order of the musical alphabet, and in the arithmetical series, 1, 2, 3, 4, 5, 6, 7; accompanied in the same alphabetical order by their ascending sharp signatures; and, vice versa, all keys with flat signatures descend in the reverse backward order of the alphabet of music, and in the arithmetical series 1, 2, 3, 4, 5, 6, 7; accompanied in the same alphabetical order by their descending flat signatures.

1. There are four letters in the natural scale, i.e. B, C, E, and F, which point out the places and distances of semitones, from their natural keys. Two of these letters, namely, B and E, may be denominated natural sharps, for, like all artificial semitonic sharps, they are immediately beneath the semitones; the two others, C and F, which mark the places and distances of semitones in relation to artificial transposed keys, are in the natural forward order of the alphabet transpositions of B and E, and all these artificial semitonic flats which mark the places and distances of semitones in relation to artificial transposed keys, are in the reverse order of the alphabet transpositions of F and C, two letters which may be denominated the natural flat associates of B and E in bringing out the semitones of the natural scale; insomuch as, like all semitonic flats of artificial transposed keys, they are immediately above the semitones. Hence, if we would give complete transposition of C major with B and E, of A minor with B and E, we have only to raise these keys one, two, three, four, five, six places higher on the stave than their natural places, and to mark the transpositions of B and E with sharp signatures. Again, if C major with F and C, or A minor with F and C, are also completely transposed by lowering them one, two, three, four, five, six places on the stave, and by marking the transpositions of F and C with flat signatures. We shall exhibit this process in columns. The natural and artificial keys shall be designated by capital letters the letters or notes
marked with sharp and flat signatures shall be represented by small characters.

(No. 1.)

C major has sign e \( \equiv \) A minor has sign b and e
D major has sign f s \( \equiv \) B minor has sign e f s
E major has sign g s \( \equiv \) C minor has sign d f s
F major has sign f s \( \equiv \) D minor has sign e s
G major has sign f b \( \equiv \) E minor has sign f b
A minor has sign f s \( \equiv \) G minor has sign a d s
B major has sign a d s \( \equiv \) G minor has sign a d s

But sharp and flat signatures at the clef do not merely mark the places, distances, and semi-tones of full tones to each other, to their respective semitones and respective keys. For if the natural keys and their semitones are by artificial keys and semitones transposed, their relative full tones must be transposed also. Hence, in constructing tables of the transpositions of artificial signatures of succeeding key, the signatures of the next preceding key are retained by every immediately subsequent key, until all the necessary signatures are exhibited. Thus, in the ordinary modes of transposition, D major, with c, retains the signatures of G major; hence D major has c s f s. A major with g retains all the signatures of D major once, except that we have A major, with c s f g s, &c.

The sharp and flat signatures, therefore, according to the ordinary methods of transposition, increase by one in each successive key; but by the scheme of artificial keys and semitones, just now exhibited in columns, the artificial signatures in each successive key will increase by the ratio of two, which means of increase will give all the semitonic and full-toned signatures necessary for each key. Accordingly, we shall give all the signatures necessary for each artificial key, we have only to attach the signatures of each following key to the signatures of the next following key, without calculating for the places and distances of relative keys and semitones, as is done by the ordinary rules for transposing regular keys, and more particularly for transposing the anomalous irregular keys, which so frequently occur in Slavonic and Irish music, and in the compositions of the great masters of the continent. For as full tones are made of half-tones, to the attaching of the semitonic signatures of every succeeding key to the signatures of every following key, until we obtain all the legitimate signatures, gives us the just expression of the full and half-tones, in relation to their proper keys. For instance, if we look back to column No. 4, and attach the signatures of G minor to the signatures of the next following key, F minor, then we obtain all signatures of F minor, i.e., d f a e f b f. Again, attach the signatures of F minor key to the signatures of E minor keys, namely, e c f a e f b f, or in columns, you have the sharp and flat signatures of A minor key; thus:

<table>
<thead>
<tr>
<th>B and e</th>
<th>A and f</th>
<th>C and s</th>
<th>D and t</th>
<th>E and u</th>
<th>F and v</th>
<th>G and w</th>
</tr>
</thead>
<tbody>
<tr>
<td>G and a</td>
<td>B and e</td>
<td>C and s</td>
<td>D and t</td>
<td>E and u</td>
<td>F and v</td>
<td>G and w</td>
</tr>
</tbody>
</table>

Let us see whether this method applies for transposing to another scale, and on the regular and intervallic character of the transposition of the entire scale shall be given in one view. In order to enable the reader to judge of the accuracy of our transposition, let it be recollected that in the above instances of transposition, the couple of sharps and flats indicating the places of semitone are on the left hand side most nigh their columns of keys:

Raise A B C D E F G with b to six places along
1st place B C D E F G A
2d place C D E F G A B
3d place D E F G A B C
4th place E F G A B C D
5th place F G A B C D E
6th place G A B C D E F
7th place A B C D E F G

Lower A B C D E F G with f and c to six places along
2d place G A B C D E F
3d place F G A B C D E
4th place E F G A B C D
5th place D E F G A B C
6th place C D E F G A B
7th place B C D E F G A

We now proceed to consider accidental signatures the peculiar use of which is known to every smatterer in music. An accidental signature is a sharp, or a flat, or a natural not placed at the clef, but occurring occasionally in the progress of an air. When put before any particular note, it influences that note only, as often as the note itself occurs on the same line or space within the bar which contains it. On the contrary, sharp or flat signatures placed at the clef, at the beginning of an air, on certain lines or spaces of the stave, influence all the notes or letters (together with their octaves), on these lines or spaces throughout the entire air, notwithstanding the occasional temporary counteraction of accidental signatures.

General is, for instance, as if the signature C, on the 1st line, depresses a note one half tone, whereas a natural counteracts either a sharp or a flat, by bringing a note to its primitive diatonic sound. According to our formula, all accidental sharps ascend, and all accidental flats descend in alphabetical and in arithmetical series; but it is by laws which distinguish them peculiarly from signatures at the clef. Unlike signatures at the clef, they vary in their symbolic form in each successive series of transposed keys, without augmenting in quantity; for sharps, flats, and naturals, in every stage of transposition, are continually, by substitution, taking each other's places; the signs of modulation are constantly changing, while their value is invariable, and the signatures of every preceding transposed key are in no case whatever attached in mass to the signatures of any next immediately subsequent key. Now, in order that we may know how that accidental signature effects the key, let us lay out the toll of calculating their places and distances from their relative keys, and without pondering with hesitation whether we shall employ a sharp or a flat, or a natural signature, in representing a change of modulation, we remark, 1st. That when any natural symbol, as c, or d, is once sharpened by accidental signature, as b or e, is once sharpened by accidental signatures, then this change brings us to another note, which is sung as in the natural scale, and is consequently marked by a natural; for no natural flat or f is twice flattened, and no natural sharp b or e is twice sharpened in the way of being once marked at the clef, and once marked accidentally by the same characteristic symbol. For instance: c f f, brings us to b n e n, and b f e brings us to c n f n. Yet it is no less true that a natural flat c or f may be, and often is, twice sharpened, once at the clef, and once accidentally at one and the same time, conversely a natural sharp b or e may be twice flattened, once at the clef, and once accidentally. 2d. When any note which is once sharpened or flattened at the clef is again sharpened or flattened accidentally, then this change is indicated by a double clef, as shown below, or by a negative accidental, ff, which duplication of signature is equivalent to a natural accidental, and is marked thus n. For instance: b ff is equivalent to a, and c ss, is equivalent to a. These two circumstances account for the origin of accidental naturals in the following tables of transposition,
ENHARMONIC.—ENOCH.

If we reckon from the keys to the thirds and all the other semitones upward, it is clear that F and G are irregular major keys, and that D and B are irregular minor keys, and also, that both classes of keys retain their primitive distances from their relative semitones throughout all their stages of transposition.

From a slight glance at the above tables of accidentals, it is evident that all flats that coincide with ascending sharps do also ascend; and that all sharps that coincide with descending flats descend also.

Now, as ascending proper sharps differ from descending proper flats by one half-tone—so, ascending flats differ from descending sharps by one half-tone; and this principle holds equally true with respect to signatures at the clef.

It is therefore clear that although an ascending semitone is the same with the same semitone flat immediately above it, that nevertheless there is a half-tone of difference between proper ascending sharps and proper descending flats; and this inference can very easily be proved independent of reasoning drawn from the enharmonic interval, by a principle involved in the formula that forms the basis of this essay. This principle may be thus expressed generally: That any key whatever, say

\[
\begin{align*}
G_b \text{ and } e & \text{ are identical to } C_e f f f \\
D_{e s s} & \text{ are identical to } D_o g f f \\
F_{s e m i n a l} & \text{ are identical to } E_f s a f s f f \\
G_{s e m i n a l} & \text{ are identical to } G_f g f f f f \\
B_{a d v a n c e d} & \text{ are identical to } A_{o f f f} f f f f f f \\
C_f & \text{ are identical to } C_e b b \\
B_{o f f f} & \text{ are identical to } B_{o d d} \\
A_{o f f f} f & \text{ are identical to } A_{e g s d a s} \\
G_{o f f f} f & \text{ are identical to } G_{e g s d a s} \\
F_b & \text{ are identical to } F_{a s e s} \\
E_{o f f f} f & \text{ are identical to } E_{b s d a s} \\
D_{o f f f} f & \text{ are identical to } D_{b s d a s} \\
\end{align*}
\]

Now that—ascending sharps and flats differ from descending sharps and flats cannot be doubted, if we reflect that D major key with e s f s or d f g f ascending, differ by one half-tone from D major with g d a e b f, or f a c s g e d a s descending.

ENNIPER or EMPER ROAD (in German Enner Strasse) extends about nine miles from Hagen to Gevelsberg, in the Prussian province of Westphalia (formerly the county of Mark), along the river Enniper or Emper, the banks of which are completely occupied with water-works. All sorts of iron-work are manufactured here. It is one of the most industrious parts of Germany, and may be compared to Sheffield or Birmingham, in England. Iron and steel manufactures are the chief. Sythas and blades for cutting straw are here made annually to the number of 30,000 dozens.

ENNUS, QUINTUS; a celebrated Latin poet of the earlier times of the republic, was born at Rudiae, in Calabria, and C. Cato the Consul became acquainted with him in Sardinia, was his pupil, and brought him to Rome, where he soon gained the friendship of the most distinguished men (Scipio Africanus the Elder and others), and instructed the young men of rank in Greek. With an extensive knowledge of the Greek language and literature, he united a thorough acquaintance with the Osan and Latin tongues, and was thereby enabled to exert a great influence on the last. The rough and unpolished style, which is to be attributed to the time in which he lived, was more than compensated by the energy of his expression and the fire of his language. Quintilian extols him highly, and Virgil shows how much he esteemed him by introducing whole verses from his poems into his own works. He attempted every species of poetry, sometimes more, sometimes less, after the Greek manner. He wrote an epic, "Scipio," in hexameters: Roman annals, from the most ancient times to his own; tragedies and comedies, of which we have some fragments; satires and epigrams; and translations. He was presented with the citizenship for his services to the Latin language and poetry, of which the Romans regarded him as the father of his country. The fragments of his works have been collected by Hesselius (Amsterdam, 1707, 4to.).

ENOCH; one of the patriarchs, who lived before the deluge. He became the father of Methuselah at the age of 65 years; and, at the age of 365 years, "God took him." The words quoted are generally understood to mean that Enoch did not die a natural
death, but was removed as Elijah was. Paul (Heb. xi) is of the same opinion.

Enoch, the Prophecy of, is an apocryphal book, ascribed to Enoch, by a misunderstanding of a passage in the Book of Jubilees. Some fathers of the church have testified their respect for it, but the Catholic church never has adopted it as canonical. The Abyssinians are said to receive it into the canon. It was for a long time lost, but Joseph Scaliger discovered a part of it. Scaliger, Vossius, and others attribute it to a Jew who lived between the Babylonian captivity and Christ's birth. St Augustine, Tertullian, and Origen quote it.

ENOS, the son of Seth, and father of Canaan; one of the patriarchs, who lived to the age of 905 years. This family preserved the worship of God, whilst that of Cain was plunged in all kinds of impiety.

ENSEMBLE (French, the whole) is used in the fine arts to denote the general effect of a whole work, without reference to the parts. Thus we speak of the ensemble of a picture, when we consider the effect of the whole representation on the mind of the spectator. A thing may be excellent in its parts, and yet, in consequence, be disapproved, if the different characters are well drawn; yet it may be deficient in its ensemble, that is, as a whole. Rousseau uses this word, in the same meaning, in music; but, at present, ensemble is used for a composition of several voices, in which the chief voices are independent of each other, as the quintets and finales in operas and oratorios.

ENSIGN (from the Latin insignis, standard). Ensign bearer, commonly called ensign, is the lowest commissioned officer in the British army, and that of the United States. In the French army, under Napoleon, the oldest and most distinguished sergeants bore the colours. Napoleon ordered that those sergeants who could not write, and who had distinguished themselves, should be preferred, "because they could not be properly promoted farther, and yet deserved some distinction on account of their bravery." (See Las Cases.) In naval language ensign is a large standard or banner, hoisted on a long pole, erected over the poop, and called the ensign-staff. It is more commonly called flag. (q.v.)

ENTAILATURE. The horizontal, continuous work, which rests upon a row of columns. See Architrave.

ENTAIL, or TAIL (from entailler, French, to mortise or cut into a piece of wood, so as to fit another piece into it, and make a joint), is, in law, an estate cut or carved out of the fees, so that the remaining estates, that is, the remainder or reversion, together with the entail tail, or all the estates tail, will constitute the entail fee. It is, accordingly, always a lesser estate than a fee simple. See Estate.

ENTERITIS (from enter, an Intestine); inflammation of the intestines. It is known by the presence of fever, fixed pain in the abdomen, costiveness, and vomiting. The causes are acute substances, indentured feces, long-continued and obstinate costiveness, spasmodic colic, and a strangulation of any part of the intestinal canal; but another very general cause is the application of cold to the lower extremities, or to the belly itself. It is a disease which is most apt to the elderly, and a quick and hard small pulse liable to a relapse. It comes on with an acute pain, extending, in general, over the whole of the abdomen, but more especially round the navel, accompanied with eructations, sickness at the stomach, a vomiting of bilious matter, obstinate costiveness, thirst, heat, great induration, and a hard small pulse. After a short time, the pain becomes more severe, the bowels seem drawn together by a kind of spasms, the whole region of the abdomen is highly painful to the touch, and seems drawn together in lumpy contractions; invincible costiveness prevails, and the urine is voided with great difficulty and pain. The inflammation is continued, and, at last, a general languishing, terminal rates at last in gangrene; or, abating gradually, it goes off by resolution. Enteritis is always attended with considerable danger, as it often terminates in gangrene, in the space of a few hours from its commencement. The treatment must be begun by making blood flow, in the words of old Tertullian, "the wine of patience, the strength of the patient will allow; but, the disease occurring more frequently in persons rather advanced in years, and of a constitution somewhat impaired, it becomes more important to limit this evacuation, and rely, in a great measure, on the effects of a number of leeches, applied to the abdomen. Another very useful step is to put the patient into a hot bath, which may presently induce faintness; or, where this cannot be procured, fomenting the abdomen assiduously. When the symptoms are thus materially relieved, an ample blister should be applied. It becomes, also, of the first importance to clear out the bowels, and the disease is likely to be discontinued should be taken to guard against accumulation of feces, exposure to cold, or anything else likely to occasion a relapse.

ENTOMOLOGY (from inverter, insects, and λογία, doctrine) is that branch of zoology which treats of the structure, habits, and consequent arrangements of the third class of articulated animals called insects or insects, which may be briefly characterized as articulated animals, furnished with articulated feet and a dorsal vessel or rudimental vestige of a heart, respiring by means of two principal parallel trachee, and provided with two movable antennae and a distinct head.

Insects are not furnished with red blood, but their vessels contain a transparent lymph. This may serve to distinguish them from the superior animals, but it is common to them with many of the inferior; though Cuvier has demonstrated the existence of a kind of red blood in some of the vermes. They are destitute of internal bones, but, in place of them, are furnished with a hard external covering, to which the muscles are attached, which serves them both for skin and bones; they are likewise without a spine formed of vertebrae, which is found in all the superior classes of animals. Some insects are furnished with articulated legs, six or more; this circumstance distinguishes them from all other animals destitute of a spine formed of vertebrae. A very great number of insects undergo a metamorphosis; this takes place in all the winged insects. They frequently change their skin in the progress of their growth. The greater part of insects are furnished with jaws placed transversely. The wings with which a very great number of insects are furnished, distinguish them from all other animals, which are not furnished with a spine composed of vertebrae. Insects are generally oviparous; scorpions and spiders, during the summer months, are viviparous. Insects have no nostrils; are destitute of voice; they are not furnished with a distinct heart, composed of ventricle and auricle. Incubation is not necessary for hatching their eggs.

Insects, like all other organized bodies, which form the animal and vegetable kingdoms, are composed of fluids and solids. In the four superior classes of animals, viz., mammals, birds, reptiles, and fishes, the bones form the most solid part, and occupy the interior part both of the trunk and limbs; they are surrounded with muscles, ligaments, cellular membrane, and skin. The number is reversed in the class of insects; the exterior part is the most solid, serving at the same time both for skin and bones; it

THE MUSCLES OF INSECTS CONSIST OF FIBRES FORMED OF FASCICULI; THERE ARE COMMONLY TWO BUT TWO MUSCLES TO PRODUCE MOTION IN ANY OF THEIR LIMBS, THE ONE AN EXTENSOR, THE OTHER A FLEXOR. THESE MUSCLES ARE COMMONLY ATTACHED TO A TENDON, COMPOSED OF A HORNY SUBSTANCE, CONNECTED TO THE PART WHICH THEY ARE DESTINED TO PUT IN MOTION. IN MOST INSECTS, THE BRAIN OF SEA ANEMONE, THE OEOSPHAGUS, DIVIDES INTO TWO LARGE BRANCHES, WHICH SURROUND THE OEOSPHAGUS AND UNITE AGAIN UNDER IT, FROM WHICH A WHITISH NERVE CONNECTS THEM. THIS IS THE SPIRAL MOUTH OF THE SUPERIOR ANIMALS, WHICH EXTENDS THE WHOLE LENGTH OF THE BODY, FORMING IN ITS COURSE TWELVE OR THIRTEEN KNOTS OR GANGLIA, FROM EACH OF WHICH SMALL MUSCLES PROCEED TO DIFFERENT PARTS OF THE BODY.

WHETHER INSECTS BE ENDOWED WITH ANY SENSES DIFFERENT FROM THOSE OF THE SUPERIOR ANIMALS, CANNOT EASILY BE ASCERTAINED. IT APPEARS PRETTY EVIDENT, THAT THEY POSSESS VISION, HEARING, SMELL, AND TOUCH, AS TO THE SENSES OF TASTE, WE ARE LEAST ACQUainted WITH. IT IS NOT PROOF OF THE FACT WHICH WE CAN PROVE THAT INSECTS DO OR DO NOT ENJOY THE SENSE OF TASTE.

THE EYES OF INSECTS ARE OF TWO KINDS; THE ONE COMPOUND, COMPOSED OF LENSES, LARGE, AND ONLY TWO IN NUMBER; THE OTHER SMALL, SMOOTH, AND VARY IN NUMBER FROM TWO TO EIGHT. THE SMALL LENSES, WHICH FORM THE COMPOUND EYES, ARE VERY NUMEROUS; 8000 HAVE BEEN COUNTED IN A COMMON HOUSE FLY, AND 1700 IN A BUTTERFLY.

THE FEAR GREATER NUMBER OF INSECTS HAVE ONLY TWO EYES; BUT SOME HAVE THREE, AS THE SCOLOPENDRA; SOME FOUR, AS THE GYRINUS; SOME SIX, AS SEVERAL OF THE CICADAE; SOME EIGHT, AS SPIDER INSECTS; SOME ARE COMMONLY IMMUNE; CRABS, HOWEVER, HAVE THE POWER OF MOVING THEIR EYES. THOSE INSECTS ARE ENDOWED WITH THE SENSE OF HEARING, CAN NO LONGER BE DISPUTED, SINCE FROG-HOPPERS, CRICKETS, &C., FEAST UPON THEM, WITHOUT DENIABLE PROOFS OF THE FACT. NATURE HAS PROVIDED THE MUSES OF THESE INSECTS WITH THE MEANS OF CALLING THEIR FEMALES, BY AN INSTRUMENT FITTED TO PRODUCE A SONG WHICH IS HEARD BY THE LATTER.

THE MALE AND FEMALE DEATHWATCH GIVE NOTICE OF EACH OTHER'S PRESENCE, BY REPEATEDLY STRIKING WITH THEIR MANDIBLES AGAINST OLD WOOD, &C., THEIR FAVOURITE HAUNTS. THEIR EARS HAVE BEEN DISCOVERED TO BE PLACED AT THE ROOT OF THEIR ANTENEE, AND CAN BE DISTINCTLY SEEN IN SOME OF THE LARGER KINDEKS, AS THE LOBSTER. THE ANTENEE OR FEELERS SEEM TO BE MERELY INSTRUMENTS OF FEELING, THOUGH SOME NATURALISTS HAVE THOUGHT THEM TO BE ORGANS OF TASTING AND SMELLING; AND OTHERS, OF A SENSE OF SKIN FLUID. THE FUNCTION IN THE MOUTHS OF INSECTS, IS EVIDENT FROM THE FACT, THAT THEIR WHOLE CLASSIFICATION, IN THE FABRICIAN SYSTEM, IS FOUNDED ON IT. THAT INSECTS ENJOY THE FACULTY OF SMELLING, IS VERY EVIDENT; IT IS THE MOST PERFECT OF ALL THEIR SENSES. BEETLES OF VARIOUS SORTS THE DIFFERENT SPECIES OF THOSE WHICH HAVE EIGHT FEET, AND MOTH, CATERPILLARS, REMAINS.

INSECTS FEED ON A GREAT VARIETY OF SUBSTANCES; THERE ARE FEW THINGS, EITHER IN THE VEGETABLE OR ANIMAL KINGDOM, WHICH ARE NOT CONSUMED BY SOME OF THEM. WILDLIFE FAVOUR FLOWERS, FRUIT, AND EVEN THE PARLIAMENT OF VEGETABLES, AVOID NOURISHMENT IN THEIR OWN NATIVE CLASS; ANIMAL BODIES, BOTH DEAD AND ALIVE, EVEN MAN HIMSELF, IS PREYED ON BY MANY OF THEM; SEVERAL SPECIES OF THE LOUSE, OF THE AURUS, OF THE GNAT, AND THE COMMON FLEA, DRAW THEIR NUTRITION FROM THE SURFACE OF HIS BODY; THE PULIX ULCERANS PENETRATES THE CUTICLE, AND EVEN ENTERS THE FLESH. A SPECIES OF GADFLY (ESTRUS HOMINIS) DEPOSITS ITS EGGS UNDER HIS SKIN, WHERE THE LARVA FEED. OTHER CATERPILLARS INSULATE THEMSELVES INTO DIFFERENT CAVITIES OF HIS BODY. ALL THE INFERIOR ANIMALS HAVE THEIR PARTICULAR PARASITIC INSECTS, WHICH FEED ON THEM DURING THEIR LIFE. THERE ARE SOME INSECTS WHICH CAN FEED ONLY ON ONE SPECIES. MANY CATERPILLARS, BOTH OF MOths AND BUTTERFLIES, FEED ON THE LEAVES OF SOME PARTICULAR VEGETABLE, AND WOULD DIE, COULD THEY NOT OBTAIN THIS. THERE ARE OTHERS WHICH CAN MAKE USE OF TWO OR THREE KINDS OF VEGETABLES, BUT WHICH NEVER ACHIEVE COMPLETE SATISFACTION, EXCEPT IN ONE PARTICULAR KIND; FOR EXAMPLE, THE COMMON SILKWORM EATS READILY ALL THE SPECIES OF MULBERRY, AND EVEN COMMON LETTUCE, BUT ATTAINS ITS GREATEST SIZE, AND PRODUCES MOST SILK, WHEN FEED ON THE WILD MULBERRY. THERE ARE A GREAT MANY WHICH FEED INSISTENIENTLY ON A VARIETY OF VEGETABLES. ALMOST ALL HERBIVOROUS INSECTS EAT A GREAT DEAL, AND VERY FREQUENTLY; AND MOST OF THEM PERISH, IF DEPRIVED OF FOOD FOR A SHORT TIME. CARVINGUS INSECTS CAN LIVE A LONG TIME WITHOUT FOOD, AS THE CARABUS, DIATUS, &C. AS MANY INSECTS CANNOT TRANSPORT THEMSELVES EASILY, IN QUEST OF FOOD, TO PLACES AT A DISTANCE FROM ONE ANOTHER, NATURE HAS FURNISHED THE PERFECT INSECTS OF MANY SPECIES WITH AN INSTINCT, WHICH LEADS THEM TO DEPOSIT THEIR EGGS IN SITUATIONS WHERE THE LARVAE, AS SOON AS HATCHED, MAY FIND THAT KIND OF FOOD WHICH IS BEST ADAPTED TO THEIR NATURE. MOST OF THE BUTTERFLIES, THOUGH THEY FLITTER ABOUT, AND COLLECT THE NECTAR IN A JUICE OF A VARIETY OF FLOWERS, AS FOOD FOR THEMSELVES, ALWAYS DEPOSIT THEIR EGGS ON OR NEAR TO THOSE VEGETABLES WHICH ARE DESTINED, BY NATURE, TO BECOME THE FOOD OF THEIR LARVAE. THE VARIOUS SPECIES OF CATERPILLARS EAT EGGS, BUT THE LARVAE OF THOSE INSECTS ON WHICH THEY FEED (SEE ICHNEUMON.) THE SIREX AND SPHIX ARE LIKELY TO CAREFUL DEPOSIT THEIR EGGS IN SITUATIONS WHERE THEIR LARVAE, WHEN HATCHED, MAY FIND SUBSISTENCE. THE SPHIX FIGULAR DEPOTS ITS EGGS ON THE BODIES OF SPIDIERS WHICH IT HAS KILLED, AND ENCLOSED IN A CELL COMPOSED OF CLAY. INSECTS AT DIFFERENT PERIODS OF THEIR EXISTENCE, USE MAKE OF ALIMENT OF DIFFERENT VARIOUS PROPERTIES; THE LARVAE OF SOME ARE CARNOVOROUS, WHILE THE PERFECT INSECTS FEED ON THE NECTARINE JUICE OF FLOWERS, E.G. SIREX, ICHNEUMON, &C. THE LARVAE OF MOST OF THE LEPIDOPTERA INSECTS FEED ON THE LEAVES AND YOUNG SHOOTS OF VEGETABLES, WHILE THE PERFECT INSECTS EITHER TAKE NO FOOD AT ALL, OR SUBSIST ON THE SWEET JUICE WHICH THEY EXTRACT FROM FLOWERS; INDEED, THE CONSTRUCTION OF THEIR MOUTHS PREVENTS THEM FROM TAKING ANY OTHER THAN FRIED FOOD.

WE SHOULD NOT CONSIDER THE FUNCTION IN AN INSECT BEGINNING WITH RESPIRATION, WHICH IS THE ACT OF INHALING AND EXHALING THE AIR INTO AND OUT OF THE LUNGS. MAMMALS, BIRDS, AND MOST OF THE AMPHIBIANS, BREATHE THROUGH THE MOUTH AND NOSE. THE AIR, WHEN RECEIVED INTO THE LUNGS, IS MIXED WITH THE BLOOD, AND IMPORTS INTO IT A CONSIDERABLE AMOUNT OF OXYGEN, AND CARRIES OFF SOMETHING NOXIOUS. SOME AUTHORS HAVE ASSERTED THAT INSECTS HAVE NO LUNGS; BUT LATER EXPERIMENTS
and observations show that no species is without them, or, at least, something similar to them; and, in many insects, they are larger in proportion to their bodies than in other animals. In most of them they lie at or near the surface of the body, and send out lateral pores or trachee. The respiration of insects has been the subject of the attention of many naturalists; and it is found that insects do not breathe through the mouth or nostrils; that there are a number of vessels, for the reception of air, placed along on each side of the body, commonly called spiracula, which are subdivided into a number of smaller vessels, or branches; that the vessels, or tracheae, give off branches from the sides where the skin is not composed of a simple membrane, but are tubes formed of circular rings; that the spiracula are distinguishable, and are covered with a small scaly plate, with an opening in the middle like a button-hole, which is furnished with membranes, or threads, to prevent the admission of extraneous bodies.

Insects are the only animals without vertebrae, in which the sexes are distinguished. Copulation is performed in them by the introduction of the parts of generation of the male into those of the female. All insects except the few that belong to a few of the genera of the order hymenoptera, such as the bee, ant, &c., where individuals are to be found, which are neither male nor female, and, on that account, called neuters. Among the bees, the neuters form the far greater part of the community, and perform the office of labourers. Among the ants, the neuters are very numerous, and constitute the only active members of the society. It has been alleged, that these neuters are nothing but females, whose parts have not been developed for want of proper nourishment. Oliver, however, after strict examination, is disposed to think them really different, though he does not adduce facts sufficient to establish his opinion. The parts which distinguish the male from the female may be divided into two classes, viz., 1. those which are not directly connected with generation; 2. those which are absolutely necessary for the purposes of generation. The circumstances which have no direct communication with generation, which serve to point out the distinction between the sexes, are the difference of size observable in the male and female; the brightness of the colour in each; the form and number of articulations of the antennae; the size and form of their wings; the presence or absence of legs; the form of the thorax which, in the male, is nearly six times larger than the male: the female coelocline is from 12 to 15 times the size of the male; the female termes is 200 or 300 times the size of the male; the colours of the male are commonly much more brilliant than those of the female; this is particularly the case in lepidopterous insects; in some insects, the colour of the male is totally different from that of the female: the antennae of the male are commonly of a different form, and larger than those of the female: frequently the males are furnished with wings, while the females have none; the lampyris, coccus, and blatta and several moths, afford an example of this: the female bee is furnished with a sting, while the male is destitute of one: the males of some insects are furnished with sharp, prominent points, resembling horns, situated either on the head or breast, which are either not present or very small in the female. The parts essential to generation afford the best distinguishing mark; in most insects, they are situated near the extremity of the rectum; by pressing the abdomen near to the anus, they may frequently be made to protrude; but the parts of generation are not always situated near the anus; in the spiders, they are situated in the feelers; in the libellula, the male organ is situated in the breast, while that of the female is placed at the anus.

The eggs of insects are of two sorts; the first membraneous, like the eggs of the tortoise and the other reptiles; the other covered with a shell, like those of the birds. Their figure varies exceedingly; some are round, some elliptical, some polygonal, some cylindrical, some pyramidal, some flat, some square; but the round and oval are the most common. The eggs of insects seldom increase in size, from the time they have been deposited by the parent till they are hatched: those of the tennbredo, however, are exceptions, for the size of the shell is certainly increased in bulk. At first, there is nothing to be perceived in the eggs of insects but a watery fluid; after some little time, an obscure point is observable in the centre, which, according to Swammerdam, is not the insect itself, but only its head, which first acquires consistence, and colour; and the same author alleges, that insects do not increase in bulk in the egg, but that their parts only acquire shape and consistence. Under the shell of the egg, there is a thin and very delicate pellicle, in which the insect is enveloped, which may be compared to the chorion of birds and amniotes. The shell is divided into cells, into which the little eggs are hatched. The little insect remains in the egg till the fluids are dissipated, and till its limbs have acquired strength to break the egg and make its escape; the different species of insects remain enclosed in the egg for very different periods; some continue enclosed only a few days, others remain for several months. The eggs of many insects remain without being hatched during the whole winter, and the young insects do not come forth from them till the season at which the leaves of the vegetables, on which they feed, begin to expand. When the insects are ready to break their prison, they commonly attempt to pierce the shell with their teeth, and form a circular hole, through which they put forth first one leg, and then another, till they extricate themselves entirely.

Insects afford nourishment to a great number of the superior animals; many of the fishes, reptiles, and birds, draw the principal part of their sustenance from that source. The immense swarms of different species of crab, which abound in every sea, directly or indirectly form the principal part of the food of the cod, haddock, herring, and a great variety of fishes. The snake, lizard, frog, and many other reptiles, feed both on land and aquatic insects. Gallinaceous birds, and many other birds, feed on insects. Swallows, indeed, feed entirely on winged insects. They afford food, likewise, to many of the mammalia, viz., to many species of the bat, to the ant-eater, &c., and even to man himself. Many species of crab, viz., lobster, common crab, shrimp, prawn, land-crab, &c., are reckoned delicacies. The larvae of some coleopterous insects and locusts form part of the food of man. Insects, likewise, by consuming decayed animal and vegetable matter, which, if left to undergo the putrefactive process on the surface of the ground, might taint the atmosphere with pestilential vapours, preserve the air pure for the respiration of man and other animals. On the other hand, the injurious which they inflict upon us are extensive and complicated; and the remedies which we attempt, are often aggravations of the evil, because they are directed by an ignorance of the nature and structure of insects.

The little knowledge which we have of the modes by which insects may be impeded in their destruction of much that is valuable to us, has probably proceeded from our contempt of their individual insignificance. The security of property has ceased to be endangered by quadrupeds of prey, and yet our
gardens are ravaged by aphides and caterpillars. It
is somewhat startling, to affirm that the condition of the
human race is seriously injured by these petty
annoyances; but it is perfectly true, that the art and
industry of man have not yet been able to overcome
the collective force, the individual perseverance, and
the impelling motives of the enemy which insects employ.
A small ant, according to a most careful and philosophical observer (Humboldt),
poses almost invincible obstacles to the progress of
civilization in many parts of the equinoctial zone.
These animals devour paper and parchment; they
destroy everything of value and importance of which
they are capable, and the effect of their ravages is
much more injurious than that of the overflow of the
rivers.

Insects are now largely employed in the cotton
fields of the southern states of America. Aphis and
caterpillars are found in great numbers, causing
considerable injury to the crop. The cotton plant
is attacked by several species of insects, including
the boll weevil, which lays its eggs in the cotton
bolls, and destroys them before they are ripe. The
beetle, or cotton stainer, is another pest that causes
considerable damage.

The cotton boll weevil is a small, brown, oval
beetle that lays its eggs in the cotton bolls. The
larvae feed on the inner parts of the boll, causing
the cotton to become dry and brittle. The adult
beetles are about one-eighth of an inch long and
have a shiny black body. They feed on the cotton
leaves and stems, causing damage to the plant.

The cotton stainer is a small, brown, oval
beetle that lays its eggs in the cotton bolls. The
larvae feed on the inner parts of the boll, causing
the cotton to become dry and brittle. The adult
beetles are about one-eighth of an inch long and
have a shiny black body. They feed on the cotton
leaves and stems, causing damage to the plant.

The cotton boll weevil and the cotton stainer are
both major pests of the cotton industry. They cause
considerable damage, and control measures are
necessary to prevent their spread. The cotton boll
weevil is controlled by the use of insecticides, and
the cotton stainer is controlled by the use of a
sex attractant.

Prevalent in this, in 1660, the great work of Swam-
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of insects, he divides them into the four following
classes: 1. those whose characters are constant,
undergoing no change whatever, and which preserve
for life the form in which they leave the ovum;
spiders, &c.; 2. those which, on their liberation from
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with much certainty as a larva or an inundation; ships
even have been destroyed by these indefatigable repu-
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Sketch of the History of Entomology. The obser-
vation of this numerous, diversified, and interesting
class of beings, and, consequently, the origin of ento-
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misleading upon this, or referring to the sacred volume
in proof thereof, we shall content ourselves with dati-
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before Christ, as, according to Pliny, it was about
that period when Hippocrates wrote upon insects.

Aristotle (της των ζώων καιρικών των φύσεων) describes them as consisting of three parts—head, trunk
and abdomen: he then speaks of what he calls τριβες
of insects, consisting of the heads of progression,
into those that walk and those that fly, noticing
and commenting on their wings, proboscis, antennae,
and feet, carefully observing the latter, and exhibiting
in this, as in every other department of zoology,
that accuracy which so eminently distinguished the
philosophical works of Alexander the Great. Pliny
the next author of any note whose attention
seems to have been directed to the study in question,
for, in his eleventh book, he speaks of various bees,
wasp, &c. From this period, down to 1519, when
the work of Albertus Magnus upon insects was pub-
lished, the science made a silent but certain progress.
Its advance in the succeeding thirty years is visible
from one page to another of the Differentia Animali-
orum, and was followed by numerous writers on the
subject of insects, whose books possessed more or
less merit; some of them were illustrated with
figures, and all tended to render the study more
worthy of the name of a science. To particularize
them within the limited bounds of an article of this
nature, is impossible. We must, therefore, be per-
mitted to pass them over with this general notice,
the folio of the learned and liberal Aldrovandus,
1602, and Mouflet's Insectorum Theatrum, excepted,
which richly merits distinction. The Experimenta,
&c. of Redi, deserve especial attention for its
triumphant refutation of the theory of spontaneous
equivocal generation—an error whose origin is buried
in the remotest antiquity, upheld by the ancient
philosophers, and not even yet eradicated from the minds
of the common people. Redi demonstrated the fact,
that every living animal is derived from an egg,
deposed by a parent every way similar to itself.

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queen Anne, who gave a new arrangement to the materials collected by his industrious though not very acute author, who was more of a collector and painter of insects than a scientist or an ornithologist. Letharding, Linnaeus and Reaumur, and other entomologists, all contributed, and some of them greatly, to multiply facts and detect errors. Lyonnet, however, merits something more than the bare mention of his name. Animated by a zeal that no disappointment could damp, and armed with a patience that set obstacles at defiance, this untiring inquirer devoted seven years of his life to the anatomy of a single insect—the larva of a species of coccus that inhabits the willow. The plates of his work, the Traité Anatomique de la Chénille du Saule (4to., 1708), eighteen in number, were all engraved by his own hand, with a minuteness, fidelity, and elegance that have seldom, if ever, been equaled. The ensemble is pronounced, by the greatest authority of our age, a chef-d'œuvre both of anatomy and engraving.

We cannot stop to notice particularly the labours of Schleiffer, Seba, Forster, and Drury, each of whom added something to the general fund of knowledge. With respect, however, to the researches of Fabricius and Goedart, this celebrated entomologist, and pupil of Linnaeus, published numerous and valuable works on his favourite science, of which we will only cite the Entomologia Systematica, emendata et aucta (4 vols., 8vo., 1792—1794), the Supplementum Entomologia Systematica (2 vols., 4to., 1796), and his Rhyngotorum, &c., (from 1801 to 1805). He was the first who had recourse to the parts of the mouth, or organs of manducation, as a basis of distribution; and a vast number of new species of insects were described by him, in his remarkably concise but clear manner, with which Gmelin, a naturalist, or rather the editor, of a very different class, enriched the Systema of Linnaeus. The career of this distinguished man, whose love of truth in matters of science is strongly exemplified in his well known emphatic epitaph on John Hill, was prematurely arrested by death in 1807. Just as he was preparing to publish his Systema Glossatorum, an extract from which is given by Illiger in his Magazin fur Insectenkunde. The splendid and costly works of Olivier (5 vols., fol., Paris, 1789—1808), Donovan (London, 1778—1803), Palsot de Beauvoss, (Paris, fol., 1803, et seq.) Crau (1762), Salm, (4 vols., 1762), Linnaeus, (1 vol., Amsterdam, 1779, continued by Stoll, in 1 vol., 4to., 1790 et seq.), together with a multitude of others of a less magnificient description, bring our sketch down to a period in the annals of the natural sciences which is graced by the name of Cuvier. It is to him that we are indebted for what is termed the natural method, or an arrangement in which, to use his own words, "all beings of the same genus are placed nearer to each other than to those of all other genera of the same order similarly disposed with respect to those of all other orders, &c." The energy and discrimination of this modern oracle of the natural sciences, as he has justly been styled, aided by untiring industry, have fixed the foundations of zoology upon the immutable basis of comparative anatomy. From the moment his Table au élémentaire de l'Histoire naturelle des Animaux, and his Leçons d'Anatomie Comparée, made their appearance, the entomologist, in common with the cultivators of every other branch of zoology, was sensible that he at last held the cley by which he could hope to traverse the hitherto impracticable labyrinth. The study now became a greater object of interest than ever. Lafontaine, Schrenck, and Latreille, guided by Cuvier, soon gave to the world his famous entomological system.

Among the modern writers of eminence on the
ENTOMOLOGY.

subject of insects, MacLeay, Leach, and Kirby stand pre-eminent in England. Prussia boasts of her Klug and Illiger; Germany of her Knoch, Mannenhain, and Germany of her Fischer; Sweden of her Paykull, Gyllenhul, and Schoenherr; and France, that favourite seat of science, gave birth to Latreille, the greatest of entomologists. There, too, count Dejean is busied with his admirable work on coleopterous insects, which, when completed, will leave nothing to be desired with respect to that order. Leon Dufour, of the same country, by his various memoirs on the anatomy of a new species of brachius, on that of the coleoptera, of the cicadera, of the cicadella, of the forficula, &c., has given ample proofs of his devotion to the science, and of his title to the rank of the first entomological anatomist of the age. Savigny, also, who sacrificed his sight to his anatomical investigations, and was one of the savants who accompanied the expedition to Egypt, has rendered the most important services to this branch of zoology, by his work on the mouths of insects in America, Melsheimer (who furnished Knoch with his greater part of these species), Say, Hentz, Le Conte. Harris, and many others, have successfully exerted themselves in detecting and describing the insects of the United States.

The history of the first and second classes of articulated animals, or the crustacea (crabs, lobsters, &c.) and arachnides (spiders), so involved with that of the third, or the insects or insects, properly so called, that but little separate allusion has been made to it.

In the earlier writings of Lamarck, he included the Crustacea, as well as the Arachnides, in his Class Insects. These have since been formed into separate Classes by him and his followers. This class is so nearly allied to the true insects, we have retained it at the head of that Class, under its own proper title.

ARACHNIDES.

The Arachnides are oviparous animals, provided with articulated members, but do not undergo a metamorphosis, similar to insects. They require, either by branching or by means of a trachea, the openings for the admission of air being stigmatiform; and they are destitute of antennae.

ORDER I.—PULMONARiE.

With a heart; each side of the abdomen with bronchial sacs; six to eight eyes; two palpi; two jaws and palpi; and four pair of feet; sexual organs double.

SECTION I.—PEDIPALPI.

Very large palpi; abdomen distinctly annulated, having no web-spinning palpi.

FAMILY I.—Scorpioides.

With a sessile abdomen, provided with four sprieces, the six terminal segments forming a tail; the last one pointed, and serving as a sting, perforated for the passage of poison; palpi forceps-shaped. *Scorpius* Afer, pl. 31, fig. 1.

FAMILY II.—Tarantulae.

With a pedunculate abdomen, each side furnished with two sprieces, and terminal by a stingless, jointed filament; palpi arm-shaped, with spinoous extremities; mandibles mono-dactyl; anterior feet longer than the others; long and dark-colored.

SECTION II.—Araneides.

Palpi like small feet, ending in a hook; last joint bearing the sexual organs in the male; four or six maxillae placed near the anal opening, in both sexes, for the purpose of spinning.

I.—Tetragnomon es.

Provided with two sprieces, and two pulmonary sacs on both sides. *Mygale Cemenaria*, pl. 31, fig. 3.

II.—Dipnomones.

Having only one sprieces, and one pulmonary sac, on each side; six spinoous extremities; the four exterior quadrangular, and two smaller ones in the middle.

FAMILY I.—Tistileae.

Spinning orifises fuscated, approximated, and cylindrical; feet strong. *Arane Domestica*.

FAMILY II.—Insectileae.

Spining palpi converging and conical; feet very slender; first and last pair are usually longer than the others; jaws inclined upon the labium. *Scopidae tharacea*, pl. 31, fig. 5.

FAMILY III.—Oribitea.

Differing from the preceding family, in the first and second pair of feet being usually longest; the jaws straight, and wider above. *Erepsa dacdomene*, pl. 31, fig. 6.

FAMILY IV.—Libericornis.

When in a state of repose the feet are horizontally extended, four anterior longest and nearly equal; eyes forming the segment of a circle one division, and in two parallel lines in another. *Thomina curta*. among.

FAMILY V.—Cucumber.

Eyes, eight in number, placed curvilinearly triangular, or ovaly truncated. *Dermestes* spinh no walf capture their prey by leaping. *Lycosa Tarantula*, pl. 31, fig. 8.

FAMILY VI.—Saltirides.

Legs formed for leaping; eyes either in a single or double quadrangular group, the smaller ones within the other. *Eresus semilugurus*.

ORDER II.—Trachearii.

Without a heart, but in its stead a single dorsal vessel; they respire through a series of spiracles in the abdomen or thorax; eyes from two to four; some are blind; mouth usually epophyron-shaped; sexual organs single.

FAMILY I.—Pygonoidea.

With a projecting epophyron; four or more placed on a single tube; feet mostly long, terminated by single hooks; at the base of the first are two orifices feet. *Pygonoem Balanem*, pl. 31, fig. 10.

FAMILY II.—Pseudoscoporiids.

With very large, pediform palpi, with a didactyle hand or a vascular button. *Cheilycerus*, pl. 31, fig. 11.

FAMILY III.—Phalangita.

With slender filiform palpi, terminated by a hook. *Sire reflexa*, pl. 31, fig. 12.

FAMILY IV.—Acridae.

With an oval or globular extremity minute body; generally with two filiform palpi; eyes minute; eight hairy feet, each terminated with two or three hooks. *Trembidium tinctum*, pl. 31, fig. 13.

FAMILY V.—Hydrachnellae.

Mouth generally produced and feet adapted for swimming. *Hydrachna geometrica*, pl. 31, fig. 14.

FAMILY VI.—Ricinidae.

Mouth produced, legs formed for walking, wandering, or parasitical land animals. *Argus reflexus*, pl. 31, fig. 15.

FAMILY VII.—Microphthirina.

Having six legs, and always parasitical. *Leptus Autumnara*, pl. 31, fig. 16.

INSECTS.

ORDER I.—Physanoura.

These are apterous insects, with six feet, and undergo no metamorphosis; head distinct; two antennae, which are longer than the head; abdomen with a terminal forked or filamentary tail.

FAMILY I.—Lepiseneae.

Antennae with many small joints; palpi produced; abdomen provided with a series of moveable appendages on each side. *Macilis polyplaca*, pl. 33, fig. 1.

FAMILY II.—Poduridae.

Antennae four jointed; mouth destitute of palpi; no lateral appendages on the abdomen; tail forked (used in leaping) while in repose it is folded under the abdomen. *Podura Phthyes*, pl. 32, fig. 2.

ORDER II.—Parasita.

With six feet; no abdominal appendages; two or four small eyes; external mouth, nipple or mouth-shaped, including a retractile sucker; sometimes having membranous lips, with doubly hooked mandibles.

FAMILY I.—Mandilucata.

Having two lips, mandibles, and jaws. *Ricinus corynectorum*, pl. 33, fig. 3.

FAMILY II.—Siphunculata.

No mandibles; mouth consisting of a hook, from which a sucker can be protruded at will. *Dificidae corynectorum*, pl. 33, fig. 4.

ORDER III.—Syphonaptera.

With a compressed body; mouth provided with a two-pleated sucker, including a triangular, or sometimes, into a articulated lamina; these form, a conical or cylindrical head, covered with scales at the base. It consists of but one genus.
Pulcra irritans, pl. 23, fig. 5. With an oval compressed body, consisting of eight sub-segments; three of which compose the thorax, and the remaining the abdomen; six feet; base, jointed, consisting of two plates inclosing a sucker.

ORDER IV.—COLEOPTERA.

Having four crustaceous elytra or wings, the two upper ones in the form of cases, which cover the fourth ones when at rest, which are folded across; they are provided with mandibles and jaws for mastication; the entire bektvix the elytra straight.

SECTION I.—PENTAMERIA.

Tarsi with five joints.

Family I.—Asaphagi.

Each jaw with two palpi, in all six; antennae generally filiform, and simple.


With strong dentated mandibles; labium small, concealed by the chin; labial palpi four jointed; jaws unarticulated, or ending in a spine or point; eyes produced; tarsi long and slender. Cicindela ocellata, pl. 23, fig. 6.

 Tribe II.—Carabidae.

Mandibles rarely dentated; labium produced; extremities of the jaws arched or hooked, and sometimes nearly straight; no articulated spine. Brotalus Jurine, pl. 23, fig. 7.

 Tribe III.—Hydrochaenidae.—Aquatilis.

With seven-jointed, filiform antennae, longer than the head, inserted near the labium; exterior palpi filiform; two eyes; tarsi five jointed. Clytobates marmoratus, pl. 23, fig. 9.

Family II.—Bryctyptera.

Body elongated, narrow; antenna moniliform; each jaw provided with a palpus; elytra shorter than the abdomen, but covering the wings; anal appendages hairy.

 Tribe I.—Fissicleri.

Head appearing as if separated from the body by a strangulation, with a deeply notched labrum. Orconara rufus, pl. 23, fig. 10.

 Tribe II.—Lonopala.

Head much separated from the body; an entire labrum; maxillary palpi length of the head, fourth joint concealed. Pederus rufoculmis, pl. 23, fig. 11.

 Tribe III.—Drepanidae.

Maxillary palpi short, fourth joint projecting; head in most males horned; tarsi with three joints, last very long. Lettea dichros, pl. 23, fig. 12.

 Tribe IV.—Microptera.

Head concealed in the thorax nearly to the eyes; thorax widening backwards trapeziform. Tachisius acrostipes, pl. 23, fig. 13.

Family III.—Serricornes.

With filiform or setaceous antenna, tufted, serrated, or pectinated in the males; some ending in a toothed club; upper part of abdomen covered by the elytra, except in one genus; tarsal penult joint frequently bilobed.

 Tribe I.—Supratergae.

Body oval; short and serrated antenna; eyes oval; palpi filiform; thorax short and broad; first four joints broad, triangular, cordiform, pegnate one bilobed. Suprategus rufipes, pl. 23, fig. 14.

 Tribe II.—Elaterides.

Body linear, depressed; mandibles notched, or bifid at their points; maxillary palpi with a triangular terminal joint; angles of the thorax toothed. Elater arvalis, pl. 23, fig. 15.

 Tribe III.—Crenonites.

Mandibles terminating in a simple point; palpi filiform; body oval or oblong, arched above, sometimes bent-arched. Ela- ptera guayaena, pl. 24, fig. 16.

 Tribe IV.—Lamphyridae.

Body straight; thorax depressed, semicircular or square, overbeeching the head; maxillary palpi thickest at their extremity; mandibles small, acute; penult joint of tarsi bilobed. Lamphyris serripes, pl. 24, fig. 17.

 Tribe V.—Melolobidae.

Body oblong, back depressed, thorax nearly square; elytra flexile; mandibles notched at tip and elongated; palpi filiform, short; head covered at the base; joints of tarsi entire. Malachius aneus, pl. 24, fig. 18.

 Tribe VI.—Cerini.

Body cylindrical; head sunk in thorax; mandibles bifid at their tips; antennae filiform, serrated, and knobbed; palpi claviform; penult joint of tarsi bilobed; eyes internally notched at base of antennae. Opicus melitensis, pl. 24, fig. 19.

 Tribe VII.—Xylotrogii.

Body long, linear; head globular, neck distinct; mandibles short, thick, dentated; antenna and tarsi filiform, last joint bilobed; in some the elytra very short. Hyleclatus Dermestoides.

 Tribe VIII.—Pityonomes.

Body ovoid, both ends rounded, convex above; head somewhat concealed in the thorax; mandibles short and dentated antenna simple, filiform, setaceous or falciform, and serrated or pectinated; palpi short, thick at the points; tarsi short. Anobiidus tessellatus, pl. 25, fig. 20.

Family IV.—Clavigerinae.

With four palpi, elytra nearly covering the abdomen; antennae eleven jointed, knobbed at their points; tarsi five jointed.

 Tribe I.—Hydrochidae.

Head posteriorly sunk in the thorax; mandibles strong, protruding, points prolonged; elytra truncaled; feet contractile; body square. Hololepta gracilis, pl. 23, fig. 22.

 Tribe II.—Ptiloidea.

Head sunk in the thorax; maxillary palpi shorter than the head; elytra not covering the abdomen entirely. Necrophorus maderci, pl. 23, fig. 23.

 Tribe III.—Paliptera.

Head ovoid, apart from the thorax, which is narrower than the head; maxillary palpi length of head, tumid at their points; abdomen ovoid, covered by the elytra. Mysopus palpis.

 Tribe IV.—Dermestinae.

Antennae abruptly claviform; legs straight; mandibles short, thick, sharp, pointed; feet short, not contractile; body ovoid; palpi short, filiform. Dermestes lardarius, pl. 23, fig. 26.

 Tribe V.—Myrthidae.

Antennae filiform, thickened at tips; legs broad; feet contractile; upper extremity of pre-sternum dilated. Byrurus pinicola, pl. 23, fig. 27.

 Tribe VI.—Macrocastsylid.-Acuti.

Tarsi generally four-jointed; sternum dilated in front; antenna six or seven jointed, some ten or twelve, fusiform or cylindrical, not longer than head; tarsi with a broad terminal nation and two hooks. Heterocerus morganius, pl. 24, fig. 28.

Family V.—Palacontiform.

Antennae compressed, six or nine jointed, with a perforated or solid claviform base; body hemispherical, or ovoid; mentum large; maxillary palpi long.

 Tribe I.—Hydropilinae.

Feet fitted for swimming; first joint of tarsi indistinct; jaws all corneous; mandibles latedented, or entire at their tips; thorax broader than long. Hydropilus caraboides, pl. 24, fig. 29.

 Tribe II.—Sphaeridae.

Legs spicidus; feet fitted for walking; tarsi five-jointed, first and second same length; jaws with two terminal lobes; body hemispherical; maxillary palpi tumid. Sphaeridium scarrabioides, pl. 24, fig. 30.

Family VI.—Lamellicornes.

Antenna eight to eleven jointed, but nine or ten the prevailing number, placed in a narrow, short and claviform, consisting of pectinated lamina; two anterior legs externally dented chin large, frequently covering the labium.

 Tribe I.—Scabridiini.

Antennae claviform and laminated, the first cup-shaped enve loping the rest. Otites cheerollis, pl. 24, fig. 31.

- The animals of this tribe are numerous, subject to great variety and are, in consequence, arranged in six sub-tribes.

 Tribe II.—Lycanides.

Antenna ten-jointed, club-leaflets perpendicularly pectinated. Lycus cuinianenous, pl. 23, fig. 22.

SECTION II.—Heteromerina.

First four tarsi five, and last two four jointed.

Family I.—Melasomanes.

Tarsal joints more entire; antenna moniliform, third joint elongated, always inserted under the projecting borders of the head; point of mandibles bifid; internal side of jaws with a tooth or hook.

 Tribe I.—Ptiliariae.

Apterous; elytra crusted and cover the abdomen, maxillary palpi filiform, or terminated by a somewhat enlarged joint. Ptilicrus setilis, pl. 23, fig. 32.

 Tribe II.—Blaphidinae.

Maxillary palpi triangular or obdibriform, with the terminal joints larger than the preceding. Blaps magniluna, pl. 23, fig. 33.

 Tribe III.—Tenebrionin.

Having wings, and the elytra free. Crypticus gibbulus, pl. 23, fig. 35.
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FAMILY II.—Taxicorvina.

Antennae bilab or at their points; joints of tarsi, except the anterior four, and antennae not longer than the head and thorax, with claviform tips, and usually partly perforated.

Trib. I. Diapridae.
Antennae somewhat perforated, claviform; thorax and elytra not margined at the sides. Diapria boleti, pl. 53, fig. 26.

Trib. II. Cerophyinae.

Body depressed, clypeiform, laterally bordered by the sides of the elytra entire; antennae without the head is sunk. Cercopis fennes, pl. 33, fig. 37.

Trib. III. Chasidcerinae.
Antennae abruptly claviform, perforated or compressed, internal side somewhat serrated. Cnudsodon nodosum, pl. 33.

FAMILY III.—Stenelmity.

Mandibles sometimes pointed, jaws unarmcd; penul joint of tarsi bilobate, antennae, filiform or setaceous, often longer than the head and thorax.

Trib. I. Helopli.

Mandibles bilab; base of antenna usually covered by the projecting margin of the head; maxillary palp longer than the labial, terminal joint triangular, tarsal joint entire, hook of the last simple. Helops violaceus, pl. 33, fig. 39.

Trib. II. Cimelincinae.

Mandibles ending in a simple point; terminal joint of tarsi hooked, penul joint sometimes bilobed. Ciletia rubiginosa, pl. 34, fig. 40.

Trib. III. Scenaphilinae.

Terminal joint of maxillary palp large, dolabiform or claviform; penul joint of four anterior tarsi bilobed and conical; body oblong; head much inclined; thorax same breadth as elytra; antennae usually short. Melandra caroboides.

Trib. IV. Geminiprures.

Mandibles bilab; tarsal penul joints bilobed; last joint of maxillary palp large; antennae filiform or setaceous, placed near the eyes, mostly elongated and serrated; body elongated, narrow, with a cylindrical thorax; elytra freely flexible. Edenerica podagraria, pl. 34, fig. 42.

Trib. V.—Rhynchotoma.

Anterior part elongated into a short. Stenotoma rostrata.

FAMILY IV.—Tachicridinae.

With a cordiform, triangular head, apart from the thorax; antenna simple, filiform, pectinated, or serrated; jaws without cornaceous teeth; tarsal hooks entire; penul joint usually bilobed.

Trib. I.—Laelariae.

Tarsal penul joint bilobed; terminal joint of maxillary palp large, triangular; antennae filiform, frequently granulated, sometimes thickening towards the tips; terminal joints in male not longer than the preceding; thorax cylindrical or square.

Trib. II.—Pyctehriinae.

Tarsal hooks simple; body oblong, straignt, and depressed; thorax round or triangular; elytra long of abdomen, with a rounded termination; maxillary palp, slightly serrated, labial filiform; antennae bilabiform or pectinated. Pychthoros coecins, pl. 34, f. 45.

Trib. III.—Morphelinae.

Body arched, head low; thorax semicircular; elytra usually short, ending in a point; antennae serrated, and in the males precinated or tufted; Mandrella avulsa, pl. 33, f. 46.

Trib. IV.—Antochinae.

Penul joint of tarsi bilobed; body oblong, thorax cordiform, divided into knots; terminal joint of maxillary palp longer than the preceding; antennae simple, slightly serrated; filiform or thickening towards the ends. Noturus monoceros, pl. 34, f. 47.

Trib. V.—Hormela.

Tarsal joints ending in two dentate hooks, along with a bristle; body oblong, thorax square; elytra filiform. Hormela maculata, pl. 33, f. 48.

Trib. VI.—Contrahirinae.

Tarsal hooks bilab; penul joint rarely bilobed; antennae simple, or slightly serrated; head incline; elytra filiform, sometimes thicker at the tips. Carnthorina concavicornis, pl. 33, f. 49.

SECTION III.—Pteramera.

All the tarsi four-jointed.

Family I.—Rhynchorinae.

Head rostriform, mouth terminal; antennae generally claviform, geniculate, and inserted on the procoxii; abdomen large; penul joint of tarsi usually bilobate.

Trib. I.—Bruchinae.

Antennae filiform; tarsi towards the base; penul or precinated; joints as broad, or broader than long; labrum breadth of head; eyes oblong, transversely, generally lunate; posterior tarsi long; the last joint of tarsi distinct; the thorax posteriorly lobed; abdomen large. Bruchus pisi, pl. 34, f. 50.

Trib. II. Antennariae.

Antennae long-jointed, with a claviform termination; labrum very small; eyes short or oval. Antennaria litteraria, pl. 34, f. 51.

Trib. III. Altirrhinae.

Tarsal penul joint bilobed; antennae claviform, straight, inserted in the rostrum, body contracted in front, oval or oval. Atlachnus femoralis, pl. 35, f. 52.

Trib. IV. Bromptinae.

Tarsal penul joint bilobed; antennae eleven-jointed, straight, inserted in the rostrum, which is long, claviform, or gradually thickening towards the base points; body linear, much elongated. Bromptus anchoragare, pl. 34, f. 55.

Trib. V. Curculioninae.

Tarsal penul joint sometimes entire, or slightly bilobate; antennae claviform, geniculate; rostrum generally bent downwards. Curculio impertialis, pl. 33, f. 56.

FAMILY II.—Xylophaga.

Tarsal joints usually entire, or when the penul joint is bilobed, the palpi are small and conical; antennae frequently with less than eleven joints, claviform, and perforated at the base.

Trib. I. Scolytinae.

Antennae less than eleven joints; body subovoid, cylindrical, or claviform; thorax breadth of abdomen; palpi simple; antennae long, or the four free joints before the club; palpi very small and conical; penul joint of tarsi bilobed in some species. Scolythus ulmi, pl. 35, f. 54.

Trib. II. Bostichinae.

Antennae claviform, less than eleven-jointed; body ovodil, or cylindrical; maxillary palp filiform, sometimes thickning towards the point. Bostichus capricornus, pl. 24, f. 55.

Trib. III. Pausili.

Body oblong, depressed; contracted in front; tarsi five-jointed, entire; palpi conical, antennae, in some species, only two-jointed, in others three joints; antennae, with perforated base; elytra truncated. Pausius meaetephalus, pl. 33, f. 56.

Trib. IV. Trygogramme.

Antennae eleven-jointed, some perforated, others not longer than the head. Dasyrocerus scutatus, pl. 34, f. 57.

FAMILY III.—Platyctena.

Tarsal joints equal; body depressed, oblong; head breadth of body, narrowed behind into a sort of peak; mandibles projecting, especially in the males; labrum small; palpi short; thorax nearly square; antennae filiform. Platyctena leves, pl. 33, f. 59.

FAMILY IV.—Longicorninae.

First three joints of tarsi covered with pectina below, two intermediate broad, triangular, or cylindrical, third deep and bilobate, labium triangular, corniform, or notched; antennae filiform, generally longer than the body; antennae sometimes inserted in a notch at the eyes, sometimes outside; foot long, slender, with long tarsi; body elongated.

Trib. I. Proninae.

Head concealed in the thorax to the eyes; last joint of palpi truncated; wings folded under the elytra; labrum very small or none; body usually depressed, lateral borders of thorax edged, dentated, or spinous; antennae serrated or pectinated in the males. Pronia coriaria, pl. 33, f. 59.

Trib. II. Cerambycinae.

With a very distinct labrum. Cerambyx hortipes, pl. 33, f. 60.

Trib. III. Nitidularia.

Wings extended nearly their whole length, slightly folded at their extremity; elytra very short and truncated; body narrow and elongated. Nectaridius minutus, pl. 34, f. 61.

Trib. IV. Lamiariinae.

Terminal joint of palpi ovate, contracted into a point; head vertical. Superba albicans, pl. 33, f. 62.

Trib. V. Apodinae.

Antennae inserted beyond the eye; head oval, abruptly compressed towards the base; thorax conical or trapeziform; abdomen nearly triangular; antennae often approximate between the eyes. Lenoa satellita, pl. 34, f. 62.

FAMILY V.—Curculidae.

Body oblong, antennae filiform, gradually thickening to the points, and inserted near the eyes; about the length of head and thorax; antennae often broad, or narrow, cylindrical, or square; head sunk in the thorax to the nearly eyes; exterior and terminal lobe of jaws widening towards the extremity.

Trib. I. Sagineri.

With a deeply notched labium; mandibles entire at the tips Sagra Cypaeus, pl. 34, f. 64.
ENTOMOLOGY.

SECTION II.

With the exception of the first family, the elytra and wings are sloping like a roof; posterior thighs and feet very large, and formed for leaping.

FAMILY I. — GEBLIDES.

Elytra and wings horizontal; antennae setaceous or filiform, tarsi three jointed. Gryllus tritituratus, pl. 33, f. 77.

SECTION III.

Elytra and wings sloping like a roof; posterior feet formed for leaping; tarsi five jointed; elytra sides of both sexes; antennae sword-shaped, filiform in both sexes, claviform in the males only, in some species.

ACHRIIE.

Posterior feet weak, shorter than the body, hardly formed for leaping; abdomen turned. Acridium orutum, pl. 33, f. 75.

ORDER VI. — HEMEPTRA.

Rostrum placed on the anterior extremity of the head; elytra and wings horizontal, terminated abruptly by a membranous appendage.

FAMILY I. — GECROCHEE.

Antennae placed near the internal angle of the eyes, and somewhat longer than the head; tarsi three jointed, the first in some species very short.

SECTION I.

Elytra and wings horizontal; feet formed for running.

FAMILY I.— FOSCULARE.

Tarsi three jointed; elytra nearly crustaceous, not reticulated, very short, posteriorly truncate, joining in a straight suture, and covering the wings, which are plicated, and their extremities projecting beyond the elytra, while in repose; abdomen terminating in a horny forçeps. Forficula aponigra, pl. 33, f. 73.

FAMILY II.— BLATRARE.

Tarsi five jointed; wings simply doubled longitudinally, and covered by elytra, frequently contiguous and illud, reticulated or crossed each other; body depressed, oval, or orbiculare; head concealed under the semicircular or orbicular thorax; maxillary palpi long, terminal joint axe-shaped, feet spinous. Blatta maculata, pl. 23, f. 74.

FAMILY III.— MANTIDES.

Tarsi five jointed; wings simply folded longitudinally; body along the front of the head; elytra short; palpi short; maxillary palpi two anterior feet greatly longer than the others, haunches long, thighs strong, compressed, legs terminated by a strong hook, capable of being folded over the thighs; thorax large. Mantodea ruralis, pl. 33, f. 75.

FAMILY IV.— SPECTRA.

Low down; eyes very small; antennae long, anterior margin of upper lip notched; antennae placed nearer the mouth than the centre of the head; head projecting, elongated, and posteriorly rounded; eyes small; first segment of the thorax short, being scarcely longer than the second. Psyllium paras, pl. 33, f. 76.

ORDER V. — ORTHOPTERA.

With coriaceous elytra, the margin of the one covering that of the other; mouth provided with mandibles; wings longitudinally folded, and sometimes transversely besides; metanotum polysemis phialidion.

SECTION I.

Elytra and wings horizontal; feet formed for running.

FAMILY I.— FOSCULARE.

Tarsi three jointed; elytra nearly crustaceous, not reticulated, very short, posteriorly truncate, joining in a straight suture, and covering the wings, which are plicated, and their extremities projecting beyond the elytra, while in repose; abdomen terminating in a horny forçeps. Forficula aponigra, pl. 33, f. 73.

FAMILY II.— BLATRARE.

Tarsi five jointed; wings simply doubled longitudinally, and covered by elytra, frequently contiguous and illud, reticulated or crossed each other; body depressed, oval, or orbiculare; head concealed under the semicircular or orbicular thorax; maxillary palpi long, terminal joint axe-shaped, feet spinous. Blatta maculata, pl. 23, f. 74.

FAMILY III.— MANTIDES.

Tarsi five jointed; wings simply folded longitudinally; body along the front of the head; elytra short; palpi short; maxillary palpi two anterior feet greatly longer than the others, haunches long, thighs strong, compressed, legs terminated by a strong hook, capable of being folded over the thighs; thorax large. Mantodea ruralis, pl. 33, f. 75.

FAMILY IV.— SPECTRA.

Low down; eyes very small; antennae long, anterior margin of upper lip notched; antennae placed nearer the mouth than the centre of the head; head projecting, elongated, and posteriorly rounded; eyes small; first segment of the thorax short, being scarcely longer than the second. Psyllium paras, pl. 33, f. 76.

ORDER VI. — HEMEPTRA.

Rostrum placed on the anterior extremity of the head; elytra and wings horizontal, terminated abruptly by a membranous appendage.

FAMILY I.— GECROCHEE.

Antennae placed near the internal angle of the eyes, and somewhat longer than the head; tarsi three jointed, the first in some species very short.

SECTION I.

Elytra and wings horizontal; feet formed for running.

FAMILY I.— FOSCULARE.

Tarsi three jointed; elytra nearly crustaceous, not reticulated, very short, posteriorly truncate, joining in a straight suture, and covering the wings, which are plicated, and their extremities projecting beyond the elytra, while in repose; abdomen terminating in a horny forçeps. Forficula aponigra, pl. 33, f. 73.

FAMILY II.— BLATRARE.

Tarsi five jointed; wings simply doubled longitudinally, and covered by elytra, frequently contiguous and illud, reticulated or crossed each other; body depressed, oval, or orbiculare; head concealed under the semicircular or orbicular thorax; maxillary palpi long, terminal joint axe-shaped, feet spinous. Blatta maculata, pl. 23, f. 74.

FAMILY III.— MANTIDES.

Tarsi five jointed; wings simply folded longitudinally; body along the front of the head; elytra short; palpi short; maxillary palpi two anterior feet greatly longer than the others, haunches long, thighs strong, compressed, legs terminated by a strong hook, capable of being folded over the thighs; thorax large. Mantodea ruralis, pl. 33, f. 75.

FAMILY IV.— SPECTRA.

Low down; eyes very small; antennae long, anterior margin of upper lip notched; antennae placed nearer the mouth than the centre of the head; head projecting, elongated, and posteriorly rounded; eyes small; first segment of the thorax short, being scarcely longer than the second. Psyllium paras, pl. 33, f. 76.
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THREE I. MEMBRACIDAE.

With two eyes; antennae three jointed, placed between the eyes; thorax prolonged behind, and covering part of the back; in some species dilated at the sides of the head. Darnius Camelopus, pl. 33, f. 8d.

THREE I. CICADELLA.

Thorax laterally dilated; in other respects like the preceding tribe. Ladera aurata, pl. 33, f. 83.

FAMILY IV. HYMENOPTERA.

Tarsi two jointed, generally with two terminal hooks, or simply vestigial; antennae ten or eleven jointed, longer than the head; body soft. 

THREE I. PYLIIDES.

Antenna terminal in two sets; elytra and wings sloping; tarsi two jointed, with two terminal hooks; females provided with an ovipositor. Lecia juncorum, pl. 33, f. 90.

THREE I. PHYSIS.

Antennae eight jointed; elytra and wings linear; second tarsal joint replaced by a vesicle, destitute of hooks. Triste physipus, pl. 33, f. 91.

THREE III. APIDULAE.

Antenne six or seven jointed; elytra and wings triangular, sloping, and without fringes; tarsi two jointed, first short, second with two terminal hooks. Apis roosei, pl. 33, f. 92. f. 92 a, larva of the same.

FAMILY V. GALLINICURAE.

Tarsal of one joint, with a terminal hook. Males two winged, or with two elytra, and devoid of a staminum. Females apterous; antennae eight, nine, and eleven jointed, and in some instances twenty-two to twenty-four. Coccus cacti, pl. 33, f. 93.

ORDER VII. NEUROPTERA.

Wings four, nacked, reticulated and transparent; mouth formed for mastication; jaws and lips straight, extended; joints of the tarsi light, usually elongated.

SECTION I. SUBLUCORICORNE.

Antenna less than twelve jointed; sublabia, seven jointed, the last form of a seta; mandibles and jaws covered by its, or by an anterior projection of the head; eye projecting, large; wings extended horizontally, or perpendicular.

FAMILY I. LIBELLULAE.

Tarsi three jointed; mandibles and jaws corneous, very strong; dentated; wings equal. Libellula carra, pl. 33, f. 94.

FAMILY II. EPHEMERIDE.

Tarsi four jointed; body very soft; lower wings much smaller than the upper ones, in some species exceedingly minute; abdomen terminated by two or three filaments. Ephemerha bioculata, pl. 33, f. 95.

SECTION II. FILICORNES.

Joints of antenna generally numerous, thickened towards the end, filiform, or setaceous, and longer than the head.

FAMILY III. PLANIFENNES.

THREE I. PANIDAE.

Tarsi five jointed; antenna setaceous or filiform; front of the antennae subtrorse; each joint elongated; lower wings sometimes long and narrow. Pedererpa rufa, pl. 33, f. 96.

THREE II. MYRMELEONIDAE.

Tarsi five jointed; antennae setaceous or filiform; front of the antennae subtrorse; each joint elongated; lower wings sometimes long and narrow. Pedererpa rufa, pl. 33, f. 96.

THREE III. HEMEROIDAE.

Wings four, equal, deflexed; first segment of trunk very short; tarsi five jointed; with four palpi; antennae filiform or setaceous. Heterobius longicornis, pl. 33, f. 98.

THREE IV. EUPILULAE.

Wings unequal, deflexed, lower ones smallest; tarsi two or three jointed; antenna ten jointed; labial palpi very short. Pusio bipunctatus.

THREE V. TERTIMA.

Tarsi four or five jointed; prothorax elongated, cylindrical; wings equal, deflexed, greatly reticulated, lower ones not bent at their internal narin; antennae filiform or nearly setaceous, sometimes short and granulated; palpi filiform, or somewhat thickened at the points. Sphagia epicles.

THREE VII. SEMILINAE.

Tarsi five jointed; prothorax ample; wings horizontal or deflexed, internal side of the lower bent, or folded below; antennae filiform or setaceous, sometimes prolonged; maxillary palps projecting, slender towards the points; last joint often short. Congylosa cornuta.

THREE VIII. PRILDRES.

Tarsi three jointed; prothorax square; body narrow, elongated, depressed, or rounded; anterior horizontal, or slightly bent; abdomen terminated by two setae; mandibles small, partly membranous. Perla lutescens.

FAMILY IV. PLICIPENNIS.

Desitute of mandibles; lower wings broader than the upper, longitudinally folded, and antennae setaceous, which, in some species provided with numerous joints; tarsi five jointed; maxillary palpi long and setaceous. Physogyna striata.

ORDER VIII. HYMENOPTERA.

Four naked ventral wings of unequal size; mouth with jaws, mandibles, and two lips; lip tubular at its base, terminating by a labium, either doubled or folded inwards, and forming the kind of anker; females provided with a compound ovipositor. 

SECTION I. TEREBRANTIA.

Abdomen in many species sessile; females furnished with an ovipositor; antennae twelve or thirteen jointed, in some more or less.

FAMILY I. SECURIFERAE.

Abdomen perfectly sessile, or connected at its base to the metathorax.

THREE I. TENTHREDINIDAE.

Maxillary palpi six jointed; labial palpi four jointed; mandibles long, compressed; ovipositor compound. Perga scutellata, pl. 34, f. 101.

THREE II. UROCERATHE.

Maxillary palpi, with two to five joints; labial palpi three; antennae filiform; ovipositor, with labium elongated, and ovipositor head nearly globular. Termes cuttingus, pl. 34, f. 102.

FAMILY II. PUPIVORA.

Wings of many species cellular, in others devoid of nerves; first abdomen very short, antennae subtrorse, in the form of the metathorax, and forming part of it; the second, which appears like the first, fixed to the preceding by a pedicle.

THREE I. EVANAE.

Abdomen placed on the thorax above the two posterior feet, in others nearly under the scutelum; wings veined, upper ones cellular; antennae filiform or setaceous, 13 or 14 jointed; maxillary palpi frequently very apparent; ovipositor in most species projecting, consisting of a filaments. Polistes polionls, pl. 34, f. 103.

THREE III. GALLICIDAE.

Lower wings with one nerve; upper, one radial cell; two or three cubital; antenna uniformly thick, or thickening towards the point; tarsi ten, to fifteen jointed; labial palpi; ovipositor spirally rolled up. Cnipeus quercus-julii.

THREE IV. CHLICIDAE.

Lower wings narrow; no cubital cell in the upper; palpi very short; labium thickened at the external extremity; antennal, jointed, very unequal, of a sessile, pointed, some, geniculated, joints never exceeding twelve, ovipositor con- sisting in the abdomen; posterior legs for forming leaping. Chloenia arcubus, pl. 33, f. 106.

THREE V. CHRYSTHES.

Lower wings with longitudinal rips, in the upper ones a radial cell, and a large cubital one; antennae filiform, thirteen jointed; ovipositor internal, exsertile, sharp-pointed; abdo- men sessile, flat beneath, and can be folded on the breast; labial palpi, body globular. Cnypeus ignitus, pl. 33, f. 107.

THREE VI. OCTURI.

Lower wings single, nerved; upper in many devoid of discoidal and radial cells; antennae filiform, ten to fifteen jointed, or thickened towards the points in females; maxillary palpi long; abdominal segment large; ovipositor tubular, formed by the extremity of the abdomen. Bedelia humeralis.

SECTION II. ACULEATA.

Abdomen pedunculated, including in the females and nectar a string; antenna of the male thirteen jointed, female twelve.

FAMILY III. HETEROGYNA.

Females and males winged, neuters aequor. Fornos Herculeas, pl. 33, f. 109.

THREE II. METALLALAE.

Females apterous, and feet strong, legs spinous and ciliated; antennae filiform or setaceous, first and third joint elongated. Mattia Klaghi, pl. f. 110.

FAMILY IV. FOSSORES.

Wings extended; in some the prothorax laterally prolonged, in others short.

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TRIBE I. SCOLIITAE.

Anterior segments of trunk laterally elongated to the inser-
tion of the wings; antennae of females close-jointed, fe-
ette thick, spiny; thigh arched; antennae straight, length
of head and thorax, shorter and arched in females, in
the upper wings of some a radial cell. Scolia trinodosa, p. 34, f. 117.

TRIBE II. SATYRIIDAE.

Feet in both sexes slender, slightly spurious or ciliate,
in some smooth; antennae length of head and thorax. Sopuga
prisma.

TRIBE III. POMPIILIDAE.

Prothorax square, either transverse or longitudinal; poste-
rion margin nearly straight; abdomen somewhat oval, narrow
at its base; legs of posterior pair with a pencil of hair. Pompiilla
vitacea, pl. 33, f. 118.

TRIBE IV. SPHROIDIDAE.

Prothorax forming a jointed neck, narrowed in front; base
of abdomen produced into a long pencil; three complete cibi-
tal cells. Podium nigripes, pl. 34, f. 114.

TRIBE V. BEREGIDAE.

Labium quite apparent, or much produced. Bembex rostrata,
pl. 34, f. 115.

TRIBE VI. LABRATIDAE.

Labrum quite concealed, or scarcely perceptible; abdomen
conical, or conically oval; mandibles deeply notched on
the lower side. Labra Ichneumoniformis.

TRIBE VII. NYSSONIDAE.

Mandibles without small teeth; labrum called, or rarely per-
ceptible; abdomen oval or conical. Nysson maculatus.

TRIBE VIII. CHABRONTIDAE.

Labrum bid, or not protruding; abdomen oval or elliptical,
increasing from the base to the extremity, claviform; head
frequently very large. Crabro crivirandus, pl. 34, f. 116.

FAMILY V. DIPLOPTERA.

Wings longitudinal; clava, claviform, clavate; eyes notched; prothorax reaching insertion of upper wings;
neat not fitted for collecting pollen.

TRIBE I. VESPIDAE.

Antenne twelve or thirteen-jointed, coniform, and pointed;
labium somewhat divided into four plumose filaments, some-
times trilobed, with four glandular points. Synagris cornuta,
pl. 34, f. 119.

TRIBE II. MASARIDAE.

Antenne eight or ten-jointed, button-shaped at tip; labrum
with two filaments at its termination, retinet into a tube
formed by the base. Massara apiformis, pl. 34, f. 120.

FAMILY VI. MELLIFERAE.

Wings extended; first joint of posterior tarsi large, com-
pressed, square, or triangular, provided with a tuft of hair
adapted for collecting pollen of flowers; jaws and lip-long,
narrow, produced into a proboldo; chin elongated, supported
on a pedicle; labium mostly lanciform or sillifom, long and
airy.

TRIBE I. ANDERSENIA.

In some species the intermediate division of the labrum
widened into a small suctor, and membrane, always longer
than the chin, nearly straight, or simply folded up-
wards; jaws and lip forming a proboldo bent downwards.
Andrenia glyphis, pl. 34, f. 121.

TRIBE II. APIARIAE.

Intermediate division of the labium sillifom or setaceous,
at least the length of the sheath, bent downwards; jaws and lip
lengthened into a proboldo, folded downwards in repose; labial
palpi compressed, filamentary scalv. Apis cynthiaulora, pl. 34, f. 122.

ORDER IX.—LEPIDOPTERA.

Four membranous wings, covered with a farrina composed
of minute scales, and having a trunkspially rolled up, inserted
at the mouth.

FAMILY I. DURANA.

Wings free in repose, perpendicular to the plano of position,
and devoid of a suctor at the base of the interior wings;
tauenue, in many, claviform, or terminating in a button, more
or less conical or triangular, in others slender, and hooked at
the termination.

TRIBE I. PAPILIONIDAE.

Legs with a pair of spurs or spines; four wings perpendicu-artly elevated in repose, antennae of head and thorax, nearly
filiform, destitute of hooks, except in one genus, in which they
are plumose and setaceous in one of the sexes. Papilio Chil-
dren, pl. 34, f. 123.

TRIBE II. HESPERIDAE.

Two pair of spurs on the posterior legs; lower wings nearly
conical in some, those in front in the form of a button or a
club, in some with a terminal hook; in others sillifom, with a
splitter extremely bent and pointed. Hesperia malacae, pl. 34,
124.

FAMILY II. CREPUCULARE.

With a stiff, hornv bristle near the insertion of the lower
wings, at their margin, entering a groove below the upper ones,
keeping them horizontal in repose; antennae claviform elon-
rated, frequently pectinated or serrated. Caterpillars with
sixteen large feet.

TRIBE I. HESPERIAE. SPHINGIDAE.

Antenne simple, clavate, looked at tip, and destinate to a
suit of scales. Cotsus acroceous, pl. 34, f. 125.

TRIBE II. SPHINGIDAE.

Antenne with a scaly, tufted termination, in a prismatic club,
thickening from their middle; lower palpi broad, scaly, third
joint point smaller, and usually indistinct. Sphurzconodonts, pl. 34,
f. 126.

TRIBE III. ZEOESIDAE.

Antenne, for the most part, divided into three filaments at scales
at their points, fusiiform, or ram's-horn-shaped; labial palpi slender,
compressed, cylindrical, or conical, third joint very distinct.
Zygita psichitis, pl. 34, f. (tie) 127.

FAMILY III. NOCTUIDAE.

Wings horizontal or inclined in repose; antennae setaceous.

TRIBE I. ROMYCIDAE.

Antenne of males pectinated or serrated; trunk very short,
or nearly none; body woolly and thick in the females; wings
frequently extended, and when lowered, lower ones margin
the upper, or nearly so. Bembix porsonea. pl. 34, f. 129.

TRIBE II. NECTO-RHYNCHIDAE.

Spiral trunk very short, or none; some of the males have
 antennae proceeding interiorly with a double row of bristles;
 females in some, not; some in others, with a short series of
round curled teeth. Cosmasteropter, pl. 34, f. 127.

TRIBE III. TITITAE.

Upper wings long and contracted, lower ones broad and
pliicver, resting horizontally on the body in some, on others
hanging nearly vertically on the sides, and raised upwards be-
hind; body cylindrical or elongated; labial palpi, in some short
nearly cylindrical, in others thrown backwards in the form
of horns; antennae usually simple. Tinea tapinica, pl. 34, f. 129.

TRIBE IV. NOCTALIDAE.

Nocturnal with entire wings, horizontally extended, or form-
ing a triangle with the body; tarsi and labial palpi bent, com-
pressed, clothed with scales, and terminating abruptly by a
joint more slender and shorter than the preceding. Nocini
oculata, pl. 34, f. 130.

TRIBE V. TURTICIDAE.

Wings in repose, slightly sloped, or horizontal; body broad,
short, somewhat triangular. Herminia Sinelion, pl. 34, f. 131.

TRIBE VI. PHALEMIDAE.

Body frequently slender; wings extended or in a flattened
slope; trunk very minute, or none; antennae pirnitated in
many males. Phalana machonoria, pl. 34, f. 132.

TRIBE VII. CHAMBIIDAE.

Wings, either very long and narrow, upper ones long and
narrow, under ones broad. Cramius reticulatus, pl. 34, f.
132.

TRIBE VIII. PERNISOHORTAE.

Wings either in two, or all cleft; body slender, elongated;
feet long; antennae simple; trunk distinct; wings sometimes
remote from the body; others inclined and close. Orneodes
hexadectyris, pl. 34, f. 124.

ORDER X.—STREPSIPTERA.

Two wings naked and membranous, accompanied by two
balancers, longitudinally folded, forming nearly the quadran
t of a circle; metamorphosis incomplete.

This order consists but of two genera. Stylips Chilendri,
pl. 34, f. 130.

ORDER XI.—DIPETERA.

With two membranous extended wings, and a balancer under
each in most species; six feet; provided with a sucker, com-
pised of a variable number of scales; setiform pieces, either
inclined in the upper furrow of a sheath, or insulated pro-
ected, terminated by two lips, or cased in one or two plates.

SECTION I. Head large or of medium size, distinct from the thorax;
tarsal hooks simple, or undistinctated; sucker incised in a sheath.

FAMILY I. NEMICERA.

Antenne with six joints at least, but usually with fourteen to sixteen.

TRIBE I. CUCIDAE.

Palpi produced, and very hairy, particularly in the males;
antenne simple, or almost so; body elongated; fourteen plumose
joints in the males; eyes large; trunk cylindrical, lengthened,
and projecting, and tumid at the point, incising a sucker of
six pieces. Colaeus pip阿根, pl. 34, f. 132.

TRIBE II. TIPULARIA.

Rostrum sometimes very short, terminated by two large
labiform processes in the form of a trumpet, directed
longitudinally under the body, sucker of two pieces; palpi
slightly cimeter, usually bent, very short and elevated. Tis
sallarae. pl. 34, f. 137.
ENTOMOLOGY.

**FAMILY I.** TENTOSTOMA.

Rostrum frequently lengthened, sometimes nearly concealecl; sucker of six pieces.

**TRIBE I.** TAPAMII.

Terminal joint of antennae without seta or style at its tip, with four or eight transverse rings; rostrum prolonged, in many species dilated and external; wings always distant. *Tabanus Africanus*, pl. 34, f. 138.

**TRIBE II.** SICAI.

The greater part of the rostrum frequently concealed, with two terminal projecting lips; sucker of four pieces; last joint of antennae destitute of style or seta, and consisting of three transverse divisions. *Cephysoma pustulatum*, pl. 34, f. 139.

**TRIBE III.** MYBAII.

Without exterior palpi; terminal joint of antennae styliiferous or clavate, divided transversely, with an umbilicus at the tip, in the form of an elongated cone, or subulate. *Mydas Lunatius*, pl. 34, f. 140, a and b.

**TRIBE IV.** LEPIDES.

With exterior palpi; antennae very short, of equal thickness, granulated, or nearly moniliform, terminating by setae. *Leptis fasciata*, pl. 34, f. 141.

**TRIBE V.** DOLICHODORA.

Rostrum very short, with two large terminal labrian processes, with palpi placed on them, or produced with a short beck; last joint of antennae flattened, and provided with a seta; wings resting on the body. *Forphygroa diaphorus*, pl. 24, f. 142.

**TRIBE VI.** ABEILCI.

Head globular, wholly occupied by the eyes in males; terminal joint of antennae lenticular, with an elongated hair-shaped seta. *Ogydromus globulosus*, pl. 24, f. 144.

**TRIBE VII.** HYBOTII.

Rostrum produced, nearly cylindrical and perpendicular, inclosing a sucker; antennae formed of two or three principal pieces, the last unisected; body elongated; balancers naked, head round; abdomen cylindrical or conical; feet long. *Empus peninus*, pl. 34, f. 145.

**TRIBE IX.** ANTIIACII.

Body not raised on the back, short, and broad; wings remote; head placed against the thorax, and on a level with it. *Anthis maximicollis*, pl. 24, f. 146.

**TRIBE X.** ROMBIALII.

Head inserted low; thorax elevated and gibbous; balancers naked; abdomen oblong or triangular; rostrum directed forwards; antennae approximate at their base, terminated by a seta, without a style. *Hombilia major*, pl. 34, f. 147.

**TRIBE XI.** VESICULOSA.

Head inclined, thorax elevated; balancers covered by a plate; abdomen inflated, vestigial; antennae two-jointed, very small in some species, with a terminal seta; or sometimes three-jointed, last having no style or seta. *Henops marginata*, pl. 24, f. 148.

**FAMILY III.** NOTOCANDYII.

Rostrum generally membranous, short, concealed, except the terminal lips; sucker of two pieces; in others long, syphon-shaped, and concealed by a produced beck, which supports the antennae; terminal joint of antennae, with many rings; wings resting on the body, and provided with a central radiated arilus.

**TRIBE I.** XYLÒPHAGI.

Terminal joint of antennae divided into eight rings. *Beris violaceus*, pl. 34, f. 149.

**TRIBE II.** STRATOMYDVII.

Terminal joint of antennae with five or six rings, exclusive of the style. *Stratomys chamaeleon*, pl. 34, f. 150.

**FAMILY IV.** ATERIICEREA.

Sucker consisting of two or four pieces, the two contiguous ones provided with palpi; retracted within the sucker into a furrow of the proboscis.

**TRIBE I.** SYRPHIL.

Antennae of various lengths, some placed on a pedicel, their seta simple. *Syrophus obscurus*, pl. 34, f. 151.

**TRIBE II.** CONOPLASTII.

Proboscis syphon-shaped, either conical, cylindrical, or setaceous. *Conops moths*, pl. 34, f. 152.

**TRIBE III.** CERITIDAE.

Buccal cavity bluberculate in some, in others a small cleft; proboscis very small when it exists; in some two palpi; antennae very short, inserted in a cavity. *Cistrus lovita*, pl. 34, f. 153.

**TRIBE IV.** MUSCINII.

Antennae two or three-jointed, in the latter prevailing, last joint depressed, with a simple or plumose seta on its back, near the base; proboscis membranous, bilobate, geniculate, withdrawn into a cavity in repose; suckers with two setae. *Musca vomitoria*, pl. 34, f. 154.

**SECTION II.**

Proboscis consisting of two setae, emerging from the buccal cavity, covered by two plates or palpi, instead of a sheath.

**FAMILY V.** PUPIPARAE.

**TRIBE I.** CORACIÆ.

Many species have wings; head and eyes of ordinary form and size; with a square thorax. *Hippoboscus equinus*, pl. 34, f. 155.

**TRIBE II.** PENTHYRONTES.

Body apertous; head small, appearing like a capsular taber- cule placed on the thorax, which is semicircular; eyes small, granulated. *Nyetceribia exsperiluina*.

**DESCRIPTION OF EXTERNAL PARTS OF INSECTS.**

**PLATE XXXI.**

THE HEAD AND ITS EXTERNAL ORGANS.

The Head furnishes the most distinctive characters of insects. It is exceedingly varied in its general form, as well as in its several parts. The most important of these are the mouth, antennae, and eyes. The head of a Dipterous insect is represented, figured, or described with appropriate appendages; but the head, independently of these is confined within the limits of a f. 22, 23.

**MOUTH.**

This organ is very complicated, and subject to great diversity of form, and construction, admirably adapted to the nature of its food. It consists of six parts, the labrum, mandibles, maxilla, palpi, labium, and mentum.

Labrum, or upper lip, figs. 22, 23, 25, e, e, e.

Mandibles, f. 22, 25, e.

Maxilla, f. 24, i.

Palpi, f. 22, 23, 24, 25, b, b, b, b, b.

Labial lobes, f. 25, h, g, g, g.

Mentum, f. 31, a.

Probicis, f. 31, b.

Lingua, or tongue, f. 31, c.

Trophi, f. 31.

**ANTENNAE.**

Horn-like processes consisting of several joints; considered by some naturalists as organs of touch, and by others, organs of hearing. f. 23, d.

**EYES.**

f. 22, 1, 1.

**NECK,** f. 22, b.

The Thorax and its several divisions; f. 26.

Collar, or prothoracic scutellum, f. 22, 26, m, m.

Prosceutum, f. 26, m.

Scutum, o.

Scutellum, p.

Metathoracic Scutum, f. 26, q.

To the Thorax are attached the wings, r, r; the rudimental alula or winglets q; the base of the intermediate femur f; the balancers u; the base of the posterior femur c, and the legs.

**WING,** f. 26, w.

**Elytra,** are membranous, or horny substances which cover the wings of insects of the order Coleoptera f. 25, a, b.

**Upper or superior wing of a Lepidopterous insect, f. 27.**

**Anterior margin,** or costal nerve, a.

**Interior margin,** b.

**Exterior margin,** c.

**Post-costal nerve,** d.

**Anal nerve,** e.

**Compound ocellus,** or the dorsal cell, f.

**Dentate fascia,** g.

**Lower or inferior wing of a Lepidopterous insect, f. 28.**

**Anterior margin,** a.

**Exterior margin,** b.

**Interior margin,** c.

**THE ABDOMEN.**

The abdomen, is that part which is attached to the posterior extremity of the thorax, and consists of six segments or wings, to which there are never any legs attached, f. 29.

**THE LEGS.**

In the whole insect tribe, they are provided with but six legs: they are composed of five parts, f. 30.

**COxa, or haunch,** is the first joint, a.

**Trochantor,** or second joint, b.

**Femur,** or thigh, c.

**Tibia,** or shank, d.

**Tarsus,** e.

This member consists of three to five articulare parts, among Coleopterous insects, and most others. To the last of these articulations are attached the claws.
ENTOZOA. This is the eleventh class of animals, according to the descending scale. It comprehends all those creatures known by the name of intestinal worms, remarkable for inhabiting and propagating within the bodies of other animals. Almost every animal is subject to be infested with worms. These are found in the alimentary canal of every creature, as well as in the lymphatic vessels, and also in the cellular substance, the liver, and the brain.

The intestinal worms are destitute of all the organs of respiration, nor have any circulating vessels, or a nervous system been detected in them. Besides this, which inhabits animal bodies, there are others which possess similar characters; hence naturalists have placed them in this class.

The circumstance of some of the Entozoa living in the liver and brain and other parts of the system, which are inaccessible, by direct means, to the alimentary canal, has excited surprise; many have accounted for their existence upon the theory of spontaneous vitality. But when we find that almost the whole intestinal worms embrace two sexes, we think it a pretty conclusive proof that these animals are produced by the ordinary means.

Although these animals must have been known to mankind from the earliest ages, yet their history has been but little investigated till lately. Two distinguished living individuals, professors Bremner and Rudolph, have devoted their lives to making collections, and have described and discussed these two obscure races of beings; and Captain Thomas Brown, of Edinburgh, some years ago, added a new species to the list of those inhabiting the human frame.

In treating of these animals we follow the arrangement of Lambl, who has given in his Familles du Regne Animal. The characters of the Class are, body soft, elongated, almost all naked; destitute of head, eyes, and feet; as also of tentacula, and the organs of respiration; in some species the intestinal canal is hardly perceptible.

ORDER I.—ELMINTHOGAMA.
Consists of worms which locate themselves on the exterior of aquatic animals, or in the internal parts of others, having a mouth, vent, and separate sexual organs; two nerve-like filaments in some species, taking their rise near the opening of the oesophagus.

FAMILY I.—ENTOMOIDS.
Inhabiting the exterior of aquatic animals, with feet-like appendages; the females, with two ovaries at the termination of their bodies.

TRIBE I.—THORACICA.
Body subdivided, the one part representing the head and thorax, and the other the abdomen.

TRIBE II.—CAPITATA.
Anterior extremity having the appearance of a head.

TRIBE III.—ANGUILLIFORMIA.
With an elongated linear body, having fin-like processes at the posterior extremity; anterior end with a sort of small denticle.

TRIBE IV.—RHIZODA.
With an elongated slender body, having terminal processes.

TRIBE V.—ACOLA.
Destitute of external processes, the ovaries only projecting.

FAMILY II.—LUMBRICIDA.
Worms which inhabit the interior of animals, and destitute of either feet-like processes or antennae.

TRIBE I.—ANGUONOTA.
Body usually filiform, with an orbicular mouth, without hooks or spines, but having lips, papillae, or a small naked tube in the shape of a proboscis. Genus acus. Body long and round, elastic and attenuated at each extremity; head furnished with three tubercles; the posterior extremity obtuse or subulated. acus lumbrioides, or large round worm, pl. 32, f. 91. Inhabits the large and small intestines in man. Genus oxyura. Cervical extremity minute, undulated, and the posterior extremity spiral; skin at the sides of the body finely crenated. oxyura vermicularis, or large round worm, pl. 32, f. 91. Inhabits the large and small intestines in man.

Filaris medusinae, pl. 32, f. 55—Trichocerehhalus dispar, pl. 32, f. 60 male, f. 61 female. Homalura subcompressa, pl. 32, f. 60. Strongyloides gigas, pl. 23, f. 65.

TRIBE II.—ECHINODONTA.
Mouth provided with teeth or hooks, and the body seldom filiform.

ORDER II.—ELMINTHOAPROCTA.
Worms which inhabit the interior of the bodies of animals; organs of generation united in each individual; destined of a floating alimentary sac, but provided with a simple cavity in the interior; and nearly or totally devoid of nerves.

FAMILY I.—HIRUDIFORMIA.
Provided with distinct sexual organs; body enveloped in a casing; soft, generally depressed, somewhat resembling a leech in form; provided with the sucker of which one or more answers the purpose of a mouth.

TRIBE I.—OLIGOPOHA.
Having one or two suckers.

TRIBE II.—POLYPOHA.
Having at least three suckers.

FAMILY II.—CYSTOIDEA.
Having sexual organs, or at least distinct ovaries; body long and frequently articulated, but not enveloped in a cyst; mouth consisting of four proboscis and processes, or oval surrounding a trunk-shaped mass, some provided with small spines, others with hooks.

TRIBE I.—ANTHOTRIA.
Having four trunks or projecting and retractive suckers.

TRIBE II.—STEFANOTRIA.
Having but one proboscis, and the lateral osci slightly or not at all projecting.

SUBDIVISION I.
Of this order the most interesting must be mankind, to be those which are most common in the human body; to which we shall confine our description.
Genus Bothei ocephalus. Body greatly elongated, and much depressed, consisting of a series of many articulations; head subangular; tail often bifurred; with oscula or suckers placed in the centre of the articulations on both sides. Bothei ocephalus latius, or Broad tape-worm, pl. 32, f. 68.

SUBDIVISION II.
Genus Tania. Body elongated, depressed, and consisting of numerous articulations, each of which is provided with an os cu la on both sides, in the centre of the edges; and the head provided with four sucking oscula. Tania Sildum, or common tape-worm, pl. 32, f. 68.

FAMILY III.—CRISTICA.
Animals enclosed in a cyst, sometimes solitary, at others congregating, often in many groups; body either wholly vascular, or beloid oily; destitute of ovaries.

TRIBE I.—MONORIA.
Animals each enclosed in a separate cyst. Cysticercus cellulosae, pl. 32, f. 64. Inhabits the cellular tissue, &c.

TRIBE II.—SYNORIA.
Many animals enclosed in a single cyst, and these often in separate groups, and which can leave or enter at will.

ENTRE-DUERO-E-MINHO; a province of Portugal, bounded north by Galicia, a province of Spain; east by Tracios-Montes and Spain; south by Beira, from which it is separated by the river Duro; and west by the Atlantic: square miles, according to Hassel, 2121; others, 3455: population, according to Antillon, 907,965; Ebeling, 817,167; Barros, 1,123,495: houses, 181,563.

EPACTS, (from ira dy, induce, intencalo), in chronology: the excesses of the solar month above the lunar synodical above, and of the solar year above the lunar year of twelve synodical months; or of several solar months above as many synodical months, and several solar years above as many dozen of synodical months. The epacts, then, are either annual or membranal. Membranal Epacts are the excesses of the civil or calendar month above the lunar month. Suppose, for example, it were new moon on the first day of January; since the lunar month is 29 days, 12 hours, 44 minutes, 3 seconds, and the month of January contains 31 days, the membranal epact is 1 day, 11 hours, 15 minutes, 57 seconds. Annual Epacts are the excesses of the solar year above the lunar. Hence, as the Julian solar year is 365 days 6 hours, and the Julian lunar year 554
days, 8 hours, 45 minutes, 33 seconds, the annual epact will be 10 days, 21 hours, 11 minutes, 22 seconds, that is, nearly 11 days. Consequently, the epact of 2 years is 22 days; of 3 years, 35 days, or rather since 30 days makes an epact of 10 years, and begins with the same. After a lapse of 312 years, the moon gets 1 day in advance of the epacts, which therefore, at the end of this period, require a day to be added to them. The equation of the epacts according to the Gregorian computation, must, however, be preferred, as by this method compensation is at once made for the excess of the Julian year, and the deficiency in the cycle of epacts. Three bissextiles being omitted every 400 years, causes 3 days to be lost in that period; and equating 3 days lost in 400 years, with 1 day gained in 312 years, we find that an average of about 290 years is required for a due correction of the epacts.

Table of Gregorian Epacts till the year 1600.

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Rule to find the Gregorian Epact. Till the year 1829, inclusive, the epact of any year is found by multiplying the golden number, or lunar cycle, of the previous year by 11, and dividing the product by 30, the remainder is the epact. The following is a general rule: Subtract 1600 from the given year, and from the hundreds in the remainder take one-fourth, omitting fractions; then for as many complete hundreds as this second remainder contains, reckon days for deduction: divide the remainder by 312, and the quotient gives days for addition; subtract the days to be added from the days to be deducted, and the remainder gives the days to be subtracted from the epact of the golden number in the preceding Table. Note. If in dividing by 312 the remainder amount to one-fourth or even 350, add 1 to the quotient. To find the golden number, add 1 to the given year, and divide by 19, when the remainder is the number sought.

EPAMINONDAS; a Theban hero, who, for a short time, raised his country to the summit of power and prosperity. He was descended from the ancient kings of Boeotia, but was without fortune, and lived in seclusion till his 40th year. He was fortunate in enjoying the instructions of the Pythagorean philosopher, Lysis, who inspired him with the high sentiments which ennobled his life. He made his first public appearance in Sparta, Whither he had been sent, with others, at the invitation of the Lacedaemonians, in order to end the war between the two countries by negotiation. In this affair, he displayed as much firmness and dignity as eloquence, and steadfastly opposed the surrender of the towns of Boeotia, in the possession of Thebes. The war was continued, and Epaminondas was made general. With 6000 men he defeated the invading army, of double the number, at Leuctra (378 B. C.). He led the attack in person on the enemy's phalanx, while his friend Pe-lopidas, at the head of the Sacred band, fell upon their flank. The Spartans lost their king, Cleombrotus, and 4000 men. Two years after, Epaminondas and Pelopidas were made Boeotarchs. They invaded Peloponnesus and destroyed the temple of Apollo from the alliance of Lacedaemon, and delivered the Messenians, whose capital they rebuilt. Epaminondas then marched with his army to Sparta; but this city was so bravely and skillfully defended by Agis-Iaurus, that the Theban hero, finding winter approaching, and the Athenians now in declared hostility with the Thebes, evacuated Laconia, after laying waste the low country. An accusation was brought against him on his arrival in Thebes, because he and Pelopidas had kept the Boeotarchate beyond the legal time; but after having pled his own cause, he was acquitted. After procuring, by his influence, the freedom of Pelopidas, who was kept prisoner by the tyrant of Phere, a new war broke out between Sparta and Thebes. Both sides raised large armies. Epaminondas invaded Peloponnesus again, and advanced suddenly upon Lacedaemon, which he expected to find in confusion, for its commander, having been apprized of his march, had hastened back, and was prepared to meet him. The Thebans, however, attacked him, and forced their way into the middle of the city; but despair stimulated the courage of the Lacedaemonians, and the Thebans were forced to retreat. To make up for his failure, Epaminondas marched with 33,000 men into Arcadia, where the greatest force of the enemy was assembled. Here was fought the battle of Mantinea, in which Epaminondas was slain, B. C. 363.

EPAULETTE (the French diminutive of epaule, shoulder,) signifies a military ornament, worn on the shoulder. It originated, in the time of Louis XIV., from the rhabard by which the belt sustaining the sword was kept from slipping from the shoulder. In some armies, every officer wears them, as in the Prussian; but there is a sufficient difference between those worn by different ranks, to enable a lieutenant or a captain to be distinguished immediately from a major or a colonel, and these again from the generals—a circumstance sometimes of great importance in battles. This means of distinction has the advantage, that it is not obvious to the enemy, as white plumes, etc., are. In the Russian and Prussian service, every officer has two epaulettes; in the French army, this is not the case, but the shoulder on which the epaulette is worn distinguishes a captain or lieutenant. Many troops in the French service wear woolen epaulettes; for instance, the grenadiers; and Napoleon thought them an efficient protection of the shoulder against the blows of swords. Many of his cavalry and infantry had epaulettes. In the English army, all officers now wear two epaulettes; the bullion, in those of field officers, and captains, are distinguished by being much thicker. The epaulettes of a colonel, have a silver star, surmounted by a crown on the strap; those of a lieutenant-colonel have a crown, while those of a major are distinguished by a star. Epaulettes have been introduced into the English navy, and, in that service, the following are the gradations of rank, as distinguished by them. Masters and commanders have one epaulette on the left shoulder; post-captains, under three years, one epaulette on the right shoulder, afterwards two epaulettes; rear-admirals have one star on the strap of the epaulette, vice-admirals two stars, and admirals three stars. Epaulettes are also worn by many civil officers on the continent of Europe, when in uniform. EPEE, CHARLES MICHAEL (abbé del). This benefactor of the deaf and dumb was born in 1712, at Versailles. He had chosen the clerical profession,
but, being unwilling to subscribe to the formulacy of faith introduced on the occasion of the Jansenist controversy, he devoted himself to law for a while, but was afterwards preacher, and canon at Troyes. His introduction to the profession of the law, and the accordure of their religious sentiments, drew upon him the displeasure of the archbishop of Paris, who forbade the abbé, for some time, to hear confessions, even those of his pupils. The idea of be-stowing on the deaf and dumb the advantages of society by means of a language of signs, was not first conceived by him, though, according to his own account, it arose in his mind without any foreign suggestion. As early as the end of the sixteenth century, a Spanish Benedictine monk, Pedro de Pounce, had educated two children of the constable of Castile, who were born deaf and dumb, so successfully that they were able not only to read and write, but also learned arithmetic, several languages, and the principles of religion, and even gained some knowledge of natural philosophy and astronomy. In England, at Switzerland, &c., successful experiments have also been made with the deaf and dumb, and, in 1748, a Spaniard named Pereira, came to Paris, and exhibited to the academy of sciences some deaf and dumb persons, educated by him, who excelled general astonished by their acquirements. None of these teachers, however, profited much by the method employed by them, and excepting the works of J. P. Bonet and Ramírez, both Spaniards, only imperfect accounts of it had been ever given to the world. So that it is plain that De l'Épée was, in some measure, the inventor of this mode of instruction, which he first tried on two sisters, and found his efforts so successful, that he resolved to devote his life to the business. This noble-minded man was a true father to the unfortunate, for whom he established an institution at his own expense. He spent his whole income, besides what was contributed by benevolent patriots, such as the duke of Penthièvre, in the education and maintenance, of his pupils, for whose wants he provided with such undeserved devotion, that he often deprived himself of the necessaries of life. He once, when quite advanced in years, passed the winter without fuel, in order that his pupils might have something to eat. He was, indeed, a most pitiful man, and he was often miserably dressed, while they were constantly well clothed. This benevolent zeal he carried so far as to derange his pecuniary affairs, and to excite the displeasure of his relations; and yet he sent a request to Catharine H. of Russia, who was desirous to aid him, that she would send him a deaf and dumb boy from her dominions, instead of presents. His compassion for a deaf and dumb youth whom he found in rags, in the streets of Peronne, involved him in much difficulty. He was convinced that this forlorn youth was the injured heir of the rich family of the count of Solar: he took him under his protection, and demanded the restoration of his rights. A lawsuit followed, which was at first decided in his favour; but when he and the duke of Penthièvre (the only protectors of the poor Joseph Solar) were dead, the decision was revoked, and the youth, driven into poverty again, was compelled to enter the army as a common cuirassier, and died soon after in an hospital. (This has been made the subject of a play by Bouilly, L'Abbe de l'Épée, which is rather a narration in dialogue than a drama, and which Kottaebus has prepared for the German stage, under the title of The Abbé de l'Épée, 1789.) Notwithstanding his efforts, he never could accomplish his favourite project, an institution for the deaf and dumb at the public expense, which was first obtained by his successor, the abbé Sicard, who has much improved the mode of instruction. De l'Épée left several writings on the instruction of the deaf and dumb, and the method pursued by him. Of all the societies in Europe, the philanthropic society at Paris was the only one which did itself the honour of choosing a deaf and dumb student, instead of men gifted with hearing. See the article Deaf and Dumb, where the subject of their instruction is treated at length.

EPERNAY, a place in France, department of the Marne, five leagues and a half from Rheims, with 5000 inhabitants, is the principal place of the trade in champagne (q.v.). Its cellars are large caverns cut in chalk, in which great numbers of bottles of champagne are stored, arranged according to the vineyards.

EPHEMERA; the name of a genus of insects, belonging to the order Neuroptera, which is thus characterized: wings four, erect, reticulated, posterior ones much smaller; extremity of the abdomen furnished with three filiform appendages. May-fly or day-fly is the popular name of the ephemerides, of which there are several species. From the short duration of the existence of these insects, the term ephemeral has been derived, which is used to signify anything short-lived or temporary. The larva, or grubs, inhabit standing and running waters, usually abounding in the latter. As baits for fish, they are much esteemed, and the perfect insect is also used for the same purpose. Great numbers fall into the water, and become the prey of fishes, frogs, and birds; a great number perishes by being caught on the method employed by them, and excepting the works of J. P. Bonet and Ramírez, both Spaniards, only imperfect accounts of it had been ever given to the world. So that it is plain that De l'Épée was, in some measure, the inventor of this mode of instruction, which he first tried on two sisters, and found his efforts so successful, that he resolved to devote his life to the business. This noble-minded man was a true father to the unfortunate, for whom he established an institution at his own expense. He spent his whole income, besides what was contributed by benevolent patriots, such as the duke of Penthièvre, in the education and maintenance, of his pupils, for whose wants he provided with such undeserved devotion, that he often deprived himself of the necessaries of life. He once, when quite advanced in years, passed the winter without fuel, in order that his pupils might have something to eat. He was, indeed, a most pitiful man, and he was often miserably dressed, while they were constantly well clothed. This benevolent zeal he carried so far as to derange his pecuniary affairs, and to excite the displeasure of his relations; and yet he sent a request to Catharine H. of Russia, who was desirous to aid him, that she would send him a deaf and dumb boy from her dominions, instead of presents. His compassion for a deaf and dumb youth whom he found in rags, in the streets of Peronne, involved him in much difficulty. He was convinced that this forlorn youth was the injured heir of the rich family of the count of Solar: he took him under his protection, and demanded the restoration of his rights. A lawsuit followed, which was at first decided in his favour; but when he and the duke of Penthièvre (the only protectors of the poor Joseph Solar) were dead, the decision was revoked, and the youth, driven into poverty again, was compelled to enter the army as a common cuirassier, and died soon after in an hospital. (This has been made the subject of a play by Bouilly, L'Abbe de l'Épée, which is rather a narration in dialogue than a drama, and which Kottaebus has prepared for the German stage, under the title of The Abbé de l'Épée, 1789.) Notwithstanding his efforts, he never could accomplish his favourite project, an institution for the deaf and dumb at the public expense, which was first obtained by his successor, the abbé Sicard, who has much improved the mode of instruction. De l'Épée

EPHEUSUS, the capital of Ionia, in Asia Minor, was built, according to Justin, by the Amazon; according to Strabo, by Androclus, the son of Codrus. It was the grand emporium of western Asia, having a convenient and spacious harbour. Though repeat-
EDLY DESTROYED BY WAR AND EARTHQUAKES, IT WAS SOON REBUILT. IT WAS FAMOUS FOR ITS TEMPLE OF DIANA, CALLED "ARTEMISION," AND SITUATED BETWEEN THE TOWN AND THE SEA. IT WAS FORMED OF MARBLE WHICH WAS CAREFULLY CHERRYPIAN, OR CTERIPIAN. IT WAS OF THE IONIC ORDER. THE NATIONS OF ALL ASIA MINOR WERE EMPLOYED 220 YEARS ON THIS E结构, WHICH WAS 425 FEET LONG, AND 200 WIDE, AND WAS ADORNED WITH 127 PILLARS, EACH 60 FEET HIGH. STILL MORE WORTHY OF NOTICE WERE THE NUMEROSITY OF THE MOST CELEBRATED GREEK MASTERS, TO BE SEEN THERE. IT HAD BEEN DESTROYED SEVEN OR EIGHT TIMES BEFORE PLYTY WROTE, PARTICULARLY BY THE NOTORIOUS EROSINAX, 356 B.C., WHOSE ONLY OBJECT IN BURNING THE TEMPLE WAS TO PERPETUATE HIS NAME. THE TEMPLE, HOWEVER, WAS REBUILT WITH MORE MAGNIFICENCE THAN EVER, BY THE EPHESIANS, WHOSE WOMEN CONTRIBUTED THEIR TRINKETS TO THE GENERAL FUND RAISED FOR THIS PURPOSE. ITS RUINS ARE NOW THE RESIDENCE OF COWHERDS AND THEIR CATTLE, AND THE ONCE SPLENDID CITY IS A POOR VILLAGE, CALLED "IZOLUK." HIRT HAS WRITTEN ON THE TEMPLE OF EPHESUS.

EPIALITAE — EPIC.

EPHALITES. SEE ALOIDES.

EPHORI; MAGISTRATES OF SPARTA, ESTABLISHED, AS SOME THINK, BY THEOPOMPUS, 746 B.C., OR ACCORDING TO OTHERS, BY LYCURGUS, TO CONDUCT THE INTERNAL ADMINISTRATION, PARTICULARLY THE JUDICIAL BUSINESS, DURING THE ABSENCE OF THE KINGS; IT WAS AN ESPECIAL PREEMINENCE OVER THE EDUCATION OF YOUTH.

THEY WERE FIVE IN NUMBER, CHosen FROM THE PEOPLE, AND HELD THEIR OFFICE ONLY A YEAR; BUT SOON BEGAN TO LESSEN THE POWER OF THE KINGS, AND FAVOURED Oligarchy.

EPHRAIMITES. FREDERIC THE GREAT, IN THE SEVEN YEARS' WAR, ESTABLISHED A MINT AT LEIPZIG, WHICH HE LET TO THE JEWS "EPHRAM, ITIG, AND COMPANY." THE AMOUNT OF RENT, INCREASING FROM YEAR TO YEAR, ROSE AT LAST TO 7,000,000 DOLLARS OF THE BAD MONEY COINED THERE. THE JEWISH CONTRACTORS STRUCK OFF A VAST QUANTITY OF EIGHT GROSCHEN PIECES, WHICH DEPRECIATED IN VALUE EVERY YEAR, SO THAT THE Fine MARK, IN 1761, ROSE TO THIRTY-FIVE DOLLARS, AND THE OLD AUGUSTUS AND FREDERIC D'OR PASSED FOR TWENTY DOLLARS.

TO IMPose ON THE PUBLIC, THE NUMBER OF THE YEAR 1763 WAS PUT UPON THESE SMALL COINS. THE PEOPLE GAVE THESE EIGHT GROSCHEN PIECES THE NAME OF "EPHRAMITAE." AT THE END OF THE WAR, THEY WERE REMOVED TO THE SAVOY PAINTINGS OF THE

EPHRATA; AN IRREGULAR VILLAGE OF AMERICA, BUILT AND OCCUPIED BY A SOCIETY OF SEVENTH-DAY BAPTISTS, ON THE Cocalico CREEK, IN LANCASTER COUNTY, PENNSYLVANIA, SIXTY MILES FROM THE CITY OF PHILADELPHIA. THIS SOCIETY, USUALLY DENOMINATED THE DUNKERS, WAS FOUNDED BY CONRAD BEISEL, A GERMAN OF MUCH INTELLIGENCE AND PIETY, WHO HAD RECEIVED A REGULAR EDUCATION AT HALLE, AND TOOK ORDERS AS A CALVINISTIC MINISTER; BUT, BEING PERSECUTED FOR HIS OPINIONS ON SOME POINTS OF THEOLOGY, WHICH HE COULD NOT RECONCILE TO HIS MIND, HE LEFT EUROPE, AND RETURNEO TO THIS PLACE ABOUT THE YEAR 1730, AND SOON FORMED A COLONY, CALLED "EPHRATA," IN ALLUSION TO THE HEBREWS WHO USED TO SING PSALMS ON THE BORDERS OF THE EUPHRATES. IT CONTAINS SEVERAL VERY ANCIENT AND SINGULAR BUILDINGS, THE PRINCIPAL OF WHICH ARE A BROTHER AND A SISTER HOUSE. THE TWO HOUSES FOR THE BRETHREN AND SISTERS ARE VERY LARGE, AND ARE FOUR STORIES HIGH; EACH CONTAINS A CHAPEL, AND IS DIVIDED INTO SMALL APARTMENTS, SO THAT SIX DORMITORIES, WHICH ARE BARELY LARGE ENOUGH TO CONTAIN A COT (IN FORMER TIMES, A BENCH AND BLOCK FOR THE HEAD), A CLOSET AND AN HOUR GLASS, SURROUND A COMMON ROOM, IN WHICH EACH FAMILY EATS THEIR MEALS AND PURSUE THEIR RESPECTIVE AVOCATIONS. THIS CLOISTER IS DISTINCTIONABLE FOR THEIR RIGID ADHERENCE TO THE PRECEPTS AND ORDINANCES OF THE NEW TESTAMENT, EVEN TO THE WASHING OF THE FEET BEFORE ADMINISTERING THE SACRAMENT; AND DO NOT ADMIT OF ANY INNOVATIONS WHATSOEVER ON THE ESTABLISHED FORMS AND CEREMONIES OF CHRIST. THEY ARE VERY OBSERVANT OF THE SATURDAY (THE SEVENTH DAY). THEY HAVE THE EXCESS OF ITALIAN COALITIONIST, WHICH WAS CALLED "CHERESIPHON, OR CTESIPHON." IT WAS OF THE IONIC ORDER. THE NATIONS OF ALL ASIA MINOR WERE EMPLOYED 220 YEARS ON THIS EDITION, WHICH WAS 425 FEET LONG, AND 200 WIDE, AND WAS ADORNED WITH 127 PILLARS, EACH 60 FEET HIGH. STILL MORE WORTHY OF NOTICE WERE THE NUMEROSITY OF THE MOST CELEBRATED GREEK MASTERS, TO BE SEEN THERE. IT HAD BEEN DESTROYED SEVEN OR EIGHT TIMES BEFORE PLYTY WROTE, PARTICULARLY BY THE NOTORIOUS EROSINAX, 356 B.C., WHOSE ONLY OBJECT IN BURNING THE TEMPLE WAS TO PERPETUATE HIS NAME. THE TEMPLE, HOWEVER, WAS REBUILT WITH MORE MAGNIFICENCE THAN EVER, BY THE EPHESIANS, WHOSE WOMEN CONTRIBUTED THEIR TRINKETS TO THE GENERAL FUND RAISED FOR THIS PURPOSE. ITS RUINS ARE NOW THE RESIDENCE OF COWHERDS AND THEIR CATTLE, AND THE ONCE SPLENDID CITY IS A POOR VILLAGE, CALLED "IZOLUK." HIRT HAS WRITTEN ON THE TEMPLE OF EPHESUS.

EPI; A GREEK PREPOSITION (ἐπί), HAVING A NUMBER OF SIGNIFICATIONS—ON, UPON, IN, OVER, ABOVE, UNDER, BEFORE, ETC. THIS WAS THE REASON OF ITS BEING COMPOUND WITH MANY WORDS WHICH PASSED OVER INTO LATIN, AND THENCE INTO ENGLISH, AS A NUMBER OF THE FOLLOWING ARTICLES WILL SHOW.

poet may fly from region to region, between heaven and hell, but he must, at least, describe his flight and his way. Slow and prolonged description is allowed in the epic. How long does Achilles rage! How slow is the death of Christ! Hence the propriety of a calm and minute description of the shield of Achilles; hence the propriety of the episode. The multitude of actors retards, like a number of wheels in clock-work, the course of the machine; since each actor requires room for his action. Novels are epic compositions, and follow the same rules. Yorick's journey occupies but three days; the highest rank of things is magnified to one evening, in a tavern. The action of the poem becomes tedious, it is true, in case of repetition, and stops when action foreign to the main purpose is introduced; but the main action of the poem may be divided into parts without being exposed to the charge of these faults, as the unity of a day is not destroyed by its division into hours. Unity, indeed, is necessary in the epic as in every poem, and, in fact, in every production of art. (See Drama.) But this unity need not be so scrupulously observed as in the drama. A writer of genius may be allowed to overload his poem, and recall the clouds, and give you a perfect epic, but merely fragments," as Byron has done in the case of the Giaour. Such productions, however, must always remain exceptions to the class of epic compositions. Parts of different operas are sometimes combined for an evening's entertainment; but no one would call such a performance an opera. The fragments of a masterly work of sculpture may be beautiful, and much more beautiful and more valuable than many complete statues; yet fragments are not statues.

From what has been said, it appears that the epic may treat very different subjects, grave and elevated like Dante's and Milton's poems, glowing and romantic like Ariosto's and Wieland's epics, cheerful and ludicrous like Tasso's and Butler's admirable productions. Accordingly, epics have been divided into heroic; mock-heroic, as the excellent Le Secolo Ripato (The R ape of the Bucket), or Pope's R ape of the Lock, or Boileau's Lutris; romantic as Tasso's Jerusalem Delivered; allegoric as Dante, &c.; but these divisions can never be very definite, as they pass imperceptibly into each other. Whilst Homer is, we might almost say, plastic, Aristotle is the true epic poet, and Milton is a quite another style, and Milton often pours forth his religious sentiments in a lyric strain; yet the poems of all are epics.

As the language and the literature of a nation always mutually affect each other, we trace this influence, of course, in epic poetry. Who can calculate the great influence which Homer probably had on the Greek language? Whilst, on the other hand, it is partly owing to the plastic trait in the two ancient languages, that this characteristic was imparted to their epic poetry. Among the modern languages of Europe, none is so well adapted to description as the English—a circumstance to which, probably, is partly owing the great number of English epics, or poems of an epic character, of which many are truly beautiful, including all varieties, from the sublimity of Paradise Lost to the wit of Hudibras. Spenser, Milton, Scott, Byron, Moore, Campbell, Southey, and many other distinguished names, are embraced in the list of English epic writers.

In the number of good epics, the Italians are next to the English, among modern nations, and can produce three of the highest character, while the English have but one of the highest rank to oppose to them: these three are Dante's Divina Commedia, one of the grandest productions of the human mind; Ariosto's Orlando Furioso, the flower of romantic poetry; and Tasso's Jerusalem Delivered, a poem which, if deficient in originality and character, two very important ingredients of an epic, cannot be surpassed in sweetness and harmony, and, in fact, has not, in our opinion, been equalled in these respects. The Italians are very rich in burlesque and satiric epics.

The Germans possess one great ancient epic, the Niebelungenlied, a poem of the grandest design, and of the highest rank of thought, and excellently done in this respect the Iliad of Homer; the chief personage of which is violent, self-willed, and incapable of self-government, so as to fall far below the rank of a true hero, whose attributes should be firmness and self-command, a spirit unshaken in adversity, and an intellect adequate to every exigency. But, in respect to poetical execution and beauty of language, the Niebelungenlied cannot be compared with the Ionic rhapsodies. Of a very early date, likewise, is the satirical epic Reynard the Fox (q. v.), a poem alike original in design and execution, in well-conceived and well-executed burlesque. It is considered a model of satiric epic poetry. The greatest modern epic of the Germans is the Meseiade, by Klopstock, which we consider faulty in its very conception, as the life of the Saviour offers but little material suitable for the epic poet, so that the poem, in general, has little of an epic character. It is not much read in Germany; when perused, it is generally as a task, and from a feeling of duty. In modern times, the Germans have had several epics from Wieland, Schultze, and others; but he who has enjoyed Camoens, Ariosto, and the epics of the British poets, need not think that his taste can be judged in value by comparison: still less should we think of extolling those German epics which partake more or less of the character of idylle poetry; and the most celebrated of which is Goethe's Hermann und Dorothea, a poem much esteemed by his countrymen in general (but in which we were never able to take any great interest), giving quaint descriptions in incorrect hexameters: it must be remembered, however, that, when this poem was written, hexameters, in German, were something new, and the standard of correctness had then not been raised so high as it has since been, and the whole was written by Schlegel. Still less could we ever relish the Louisa of Voss, a poem which treats in regular epic style the scenes in the life of a country clergyman, and in which the standing epithet ehrwardig (respectable) is as often and gravely repeated, whenever "the pastor of Grunau" is mentioned, as swift-footed, in Homer, with the name of Achilles. Descriptiveness is not so prominent a feature in the German language as in the English (it is more abstract and metaphysical, hence in poetry more lyrical), and therefore it does not so naturally lead the poet to epic poetry.

The most important epic of the Spaniards is Er- cilla's Araucana, a poem, which, to foreigners, generally appears like a dull chronic, defective in poetical conciseness of language and originality of ideas. The Spaniards possess several epics of an allegoric-religious character.

One of the most curious of epic productions is Camoens' Lusitd, which, like a magnificent flower, sprung naturally out of a heroic and glorious age, and which, in spite of the many animadversions on particular parts of it, in which the taste of the age may have prevailed over the higher claims of poetry, will be prized as a thing of much beauty, the ideas and beautiful descriptions are valued.

The French language, the chief traits of which are
EPICARMUS—EPICURUS.

precision, and an agreeable and often charming vivacity, is not very well adapted for the epic, which, not to become tedious in the slow progress of the narrative, on account of its language and qualities for which the French language is by no means remarkable. The Henriad strikes most foreigners as a failure, in which the author's intellect was superior to his genius. Boileau's comic epic, the Lurin, is much esteemed.

EPICURUS, as is well known that Homer's Iliad and Odyssey are the principal. Much the most distinguished Roman epic is the Aeneid of Virgil. Lucan's Pharsalia is rather a historical chronicle than an epic. It is intended as an apotheosis of Pompey. The licentious Petronius also wrote an epic on the civil wars of Caesar and Pompey. Valerius Flaccus, contemporary of Vespasian, wrote an epic on the Argonauts, too close an imitation of the Argonautica of Apollonius Rhodius. There are, however, some noble passages in Valerius Flaccus. Silius Italicus, wrote an epic on the second Punic war. Suetonius has preserved some of the author's letters, the Thebaid, which he dedicated to this corrupt tyrant. His style is bombastic and affected; but he is a writer of genius. Dante acknowledges this in his poem.

EPICARMUS OF COS, a philosopher of the Pythagorean school, lived in the latter part of the fifth and the first century B.C. He was a freedman, and there wrote his celebrated comedies, now lost. Their number is reckoned at fifty-two, and the titles of forty of them have been preserved. The tyrant Hiero banished him from Syracuse, on account of his philosophic principles, and some allusions in his comedies. He ended his days in his native place, at an advanced age. The Sicilian comedy of Epicarmus, prior to the Attic, grew out of the mines, which were peculiar to this island, making a sort of popular poetry. He arranged the separate unconnected scenes, exhibited in the mines, into continued plots, as in tragedy. His comedies were long regarded as models in this species of composition, and are as much distinguished by their knowledge of human nature as by their wit and lively dialogue. The Sicilian comedy, in opposition to the Attic Ironic, is also designated as the Doric comedy.

EPICETUS is the name of a philosopher, born in Lycaonia, in A.D. 90, and lived at Rome, where he was the slave of Epaphroditus, a brutal freedman of Nero, whose abuse and mal-treatment he bore with the fortitude of a Stoic. It is related of him, that, his master once striking a severe blow upon his leg, he calmly remonstrated, telling him that he would break the limb. The tyrant redoubled his blows, and broke the bone. "Did I not tell thee so?" was the only exclamation of the philosopher. He was afterwards set at liberty, but always lived in the greatest poverty. The foundation of his morality was patience and abstinence. The excellence of his system was universally acknowledged. Domitian banished him, with other philosophers, from Rome; for the tyrant could not but hate men whose principles breathed scorn of all injustice and wickedness. Epictetus settled in Epirus, but returned after the death of Domitian, and was in high esteem with Marcus Aurelius, and, A.D. 134, was made governor of Cappadocia. Arrian collected the sayings of Epictetus, his teacher; we have them still, under the title of Enchiridion. Besides this manual, we have four books more of philosophical maxims, by him. Of both works, especially of the Enchiridion, there have been many editions. Schweighauser has published them together (Leipzig, 1790; 8vo.). As a proof of the high respect in which Epictetus was held, this study lamp was sold after his death for three thousand drachmas.

EPICURUS; born at Gargratus, near Athens, 342 B. C. This Greek philosopher was the son of poor parents, and in his youth he owners a situation, that, in his 12th year, he went to Athens to attend the instructions of the grammarians Pamphilus. Once hearing him repeat a verse of Hesiod, in which Chios is called the first of all created beings, he inquired who created Chaos, for he must be the first of existences. The grammarians referred him to the philosophers, whom Epicurus henceforth zealously attended. But he was not contented with seeing Athens only. In order to cultivate his mind, and to collect information, he travelled through various countries, and at last, in his 30th year, opened his school in a garden at Athens, which was soon surrounded by crowds of scholars. He taught that the thing in a happiness, springing not from sensual gratification or vicious pleasures, but from virtue, and consisting in the peace and harmony of the soul with itself. He accordingly renounced vice, and embraced virtue, not for their own sakes, but for their connexion with true happiness, vice being as incompatible with it as virtue is essential to it. He recommended wisdom, moderation, temperance, seclusion from public affairs, gentleness, forbearance towards the self-love of men, firmness of soul, the enjoyment of decent pleasures (so far as it does not incapacitate us for new pleasures), and contempt of life. Freedom from pain he regarded as desirable, but, at the same time, he bore with fortitude the most excruciating pains of body. Although he distinctly showed the meaning of his doctrines by his own exemplary life (which some, however, charged with pride and envy), yet they have been often misunderstood or misrepresented. His doctrine of the origin of the universe, borrowed from Democritus, is atomical and material. Proceeding upon the axiom, that nothing can be produced from nothing, he assumed two necessary, eternal and infinite first causes—space, and atoms, or indivisible bodies, arranged in endless variety. These atoms, by virtue of their natural gravity, moved in space, and mingled with one another. To make the union possible, he supposed them to move, not in straight but in curved lines. By these motions, they crossed and hit each other in all possible ways; and from their numberless combinations, and intervolutions, arose bodies and beings of all kinds. Although single atoms had no other qualities than figure and gravity, they produced, when combined in bodies, the various qualities that affect the senses, as colour, sound, smell, &c. He further taught, that as all things arose from the union of atoms, so all things will be again destroyed by their dissolution; that there are multitudes of worlds, formed by chance, which are continually rising and falling. The world, as it has had a beginning, must have an end; and out of its ruins, a new one will be formed. He found no difference between men and brutes, and ascribed the origin of the soul to the same material process above described. The gods, he thought, lived in eternal tranquillity, unconcerned about the world. This doctrine, which was not unjustly charged with atheism and materialism, drew upon him much opposition and calumny. He lived 50 years in the midst of a system which found many followers in Rome, among whom Celsus, Pliny the elder, and Luceritus, were the most eminent, although it never attained the reputation of the Peripatetic, Stoic, and Platonic schools. Little
is left of his numerous writings. Some fragments of a Treatise on Nature have been found at Hercu-
laneum, and published by Orelli (Leipsic, 1818.)

The other accounts of his philosophy are only the
poem of Lucretius, and the notices of it in Cicero,
Pliny the elder, &c., principally collected by
Schneider, Leipsic, 1813, in a revised and improved
dition.—An epicurean, according to the perverted
meaning of the epicurean doctrine, is one who is
devoted to sensual enjoyments, particularly those of
the table.

EPICYCLE, in the ancient astronomy, was a sub-
ordinate orbit or circle, which was supposed to move
on the circumference of a larger one, called the dif-
ferent; by means of which one motion, apparently
irregular, was resolved into two that were circular
and uniform. And when the observed motion was so
irregular and complicated as not to be resolved
with one epicycle, others were added, till a nearer
approximation was obtained. This system owed its
origin to a prejudice that seems to have been ex-
tremely ancient, in favour of circular motion; and
the problem successively propounded to the attention
of astronomers in those times, was to assign the pro-
per proportion of the different and epicycle which
should approximate nearest to absolute observation.
See Astronomy, History of.

EPICYCLOID, in geometry, is a curve generated
by a point which moves about another circle, either on
the concavity or convexity of its circumference, and
thus differs from the common cycloid, which is gener-
ated by the revolution of a circle along a right line; though the latter has some-
times been assimilated with the former, by consider-
ing the right line as the circumference of a circle,
whose diameter is infinite. The invention of cyclo-
eclipses is ascribed to M. Roemer, the celebrated
Danish astronomer.

EPIDaurus; one of the most considerable
towns and commercial seaports of ancient Greece;
situated in Argolis, in the Peloponnesus; particularly
celebrated for its magnificent temple of Esculapius,
which stood on an eminence not far from the town.
An inscription over the entrance declared it to be
open only to pure souls. Crowds of invalids resorted
to the place, in hopes of obtaining a cure from the
beneficent divinity, in whose honour festivals were
celebrated yearly.

EPIDEMIC, or EPIDEMIC DISEASE (from ἐπι, upon,
and ἐπιμοῦς, among the people), signifies a state
of sickness which prevails in a place or tract of
country only for a temporary period. An epidemic
always originates in transient external influences, which
gradually produce such changes in the bodily system, as
finally bring on the sickness. Thus many diseases
appear to arise from some peculiar morbid-matter in
the atmosphere, brought by particular winds; e. g.,
the influenza, and other diseases: also, poor or scanty
food, unwholesome mixtures, &c., may occasion
epidemics. Seasons of scarcity, which compel men
to have recourse to unusual means of subsistence, (as,
for example, in Norway and Sweden, to the bark of
trees instead of corn), often occasion epidemics.
The ergot in rye is supposed to be the cause of ra-
pidenia. Bad barley, or much mixture of bearded
laral (lofium temulentum), makes the beer which
is prepared from it unwholesome, and produces sick-
ness in those who partake of it. Causes producing a
disturbed state of mind, such as war, sieges, earth-
quakes, &c., by their effects on the nervous system,
may occasion an eruption of epidemical diseases, or at least render them more malignant.

Epidemics sometimes begin with a few, sometimes
attack great numbers at once, as commonly happens
in a great and sudden change of wind or weather.

If, for instance, after a long continuance of a west
or south-west wind, with warm weather, it suddenly
changes to an east or north-east wind, we hear
people complaining directly of coughs, colds, rheuma-
tics, &c. An epidemic, at its commencement, is
usually mild, and spreads very slowly; but as it
spreads; as it goes off, it, for the most part, assumes
a mild character again. It frequently terminates as
gradually as it began, but sometimes suddenly.

Many persons are not at all affected by the prevailing
disease. The cause probably lies in their bodily
habit, which is opposed to the prevailing influences,
and makes them capable of resisting them longer
than other persons. Thus it often happens that men
with chronic complaints, hypochondriacal, &c., remain
free from epidemical disorders. Epidemics are often
confounded with contagious disorders. The first originally
are not contagious; their origin and propagation
depend on general influences, and they commonly
generate no contagious matter, producing the same
disease in another body by contact with it. It is
only in particular circumstances, especially if the
disease prevails in a small space, and many patients are
crowded into a narrow room, that a contagious mat-
ter can be generated, forming a corrupt atmosphere
about the sick, and capable of exciting the disease in
persons who come near it. Even under these cir-
cumstances, contagion does not necessarily take
place, and that only in extremely crowded and
groundless fear of contagion. Thus, for in-
stance, that is frequently ascribed to contagion, which
is only the consequence of a violent shock of the
nervous system at the sight of a sick person, perhaps
in a loathsome state, whereby the disease, to which
the body was already disposed, is more quickly de-
veloped.

EPIDERMIS (from ἐπι, upon, and ἐπιμοῦς, the true
skin); the scarfskin. See Cuticle, and Skin.

EPIDOTe. This mineral is found crystallized in
rhombic prisms variously modified, both laterally and
in its extremities; it cleaves parallel to the sides of
a right-oblique-angled prism of 115° 30', and 64°
24', which is therefore its primary crystal. Some of
its more interesting secondary or actually occurring
forms are the following, viz.: 1. the primary crystal,
altered by the truncation of its acute lateral edges,
and terminated at both extremities by dihedral sur-
faces; 2. the same, but terminated by four-sided
pyramids, whose apices are truncated; 3. the pri-
mary crystal, with all its lateral edges truncated and
terminated as in the last instance. The prisms are
generally streaked longitudinally; lustre, vitreous;
colour, green and gray prevalent. Among the
most common shades of the first is pistachio-green;
the grey colours pass into white; translucent on the
edges, and sometimes transparent; brittle; hard-
ness above that of feldspar, and little inferior to
quartz; specific gravity, 3.26 to 3.42. Some of the
larger crystals from Norway consist of concentric
coils, the outer ones of which, being peeled off,
leave a crystal with smooth faces. Thin crystals
are often observable. When massive, the individu-
als are columnar, straight, and either parallel or di-
vergent; they are sometimes granular, and even
become, occasionally, impalpable, when they are
strongly connected. The deep green varieties are
called, in common language, epidote, while the gray
are denominated zoisite; no distinction exists be-
tween the two, except what arises out of colour.
The granular variety has also been distinguished by
mineralogists as a separate species of epidote, a black variety from Piedmont, which is highly charged
with oxide of manganese, has been called the man-
ganesian epidote. The chemical composition of
epidote is as follows, the specimen analyzed consisting
of
EPIGASTRIC—EPIMENIDES.

The green variety from Norway: silica, 37; alumine, 21; lime, 15; oxide of iron, 24; oxide of manganese, 1.50. Before the blow-pipe, this species melts, with much intumescence, into a greenish transparent glass, in which it occupies drusy cavities, or narrow veins, being irregularly distributed through them, without ever entering into their composition, as a regular ingredient. Magnificent crystals of it, two or three inches in length, and one or two in diameter, are found at Arendal, in Norway, and are hence called Arendalite. Similar varieties occur in Sweden, and at Franconia, New Hampshire. Finely crystallized specimens come from Piedmont; and the zoisite variety is found in the Tyrol, and in a great number of places in the United States. The transparent crystals, of a fine colour, are sometimes wrought by the lapidary; though they are esteemed of little value in jewellery.

EPIGASTRIC (epigastricus, from εις, upon, or above, and αετως, the stomach). That part of the abdomen that lies over the stomach is called the epi-gastricus. It is sometimes used of the epigastrium to an imaginary line above the navel, supposed to be drawn from one extremity of the last of the false ribs to the other. Its sides are called hypochondria, and are covered by the false ribs, between which lies the epigastrium.

EPIGLOTTIS (επίγλωττον, upon, and γλώττα, the tongue); the cartilage at the root of the tongue, that falls upon the glottis, or superior opening of the larynx; upper part of the windpipe. Its figure is nearly oval; it is concave posteriorly, and convex anteriorly. Its apex or superior extremity is loose, and is always elevated upwards by its own elasticity. While the back of the tongue is drawn backwards in swallowing, the epiglottis is put over the aperture of the larynx; hence it shuts up the passage from the mouth into the larynx. The base of the epiglottis is fixed to the thyroid cartilage, the hyoides, and the base of the tongue, by a strong ligament.

EPIGONI; the collective name of the sons of the seven Greek princes, who conducted the first war against Thebes, without success. The name signifies after-born, or successors, from τελων and γνησιαν, to be born. See Thebes.

EPIMENIDES (Επιμενηδής, upon, and γνησιον, I write; originally an inscription, then a poetical inscription in temples, on tombs, &c.). The object requires brevity, but admits of all kinds of sentiments and ideas; and it is a great mistake to suppose the epigram always satirical. From its concise and expressive character, it is, indeed, well fitted for satire, and often employed for satirical purposes, as it was, likewise, with the Romans; but an epigram may be didactic, satiric, comic, lyric, or elegiac. Lessing, in his Theory of the Epigram, says, that it is made up of two parts,—of an interesting idea and a striking conclusion; but Herder has shown that this is not the essential character of the epigram, though a frequent and agreeable form. It was not, by any means, generally the case with the Greek epigrams. The epigram, with the Romans, flourished most, as was natural, in corrupt times, when satire found most occasion for reproach, and wit to be the place of noble ideas. Catullus and Martial were distinguished epigrammatic poets among the Romans. Marot, in the time of Francis I., Piron, J. B. Rousseau, Lebrun, Boileau, and even Racine, are distinguished in this department among the French. The most elegant epigrams in French are generally attributed to Lebrun; and he is also the most licentious; and offend as much by their indelicacy as they divert by their ingenuity. The tender and pathetic epigram of the Greeks has been supplied by the madrigal among the Italians, Spanish, Portuguese, and French. The French have distinguished themselves beyond most nations in epigram.

EPIGRAPH; the inscription (γρ., c. g., on a temple, or prefixed to a book (metos)) on Epi-graphy; the study or knowledge of inscriptions, a science auxiliary to history. The epigraphic side of a coin is that on which the image and the inscription are impressed; monographie is the name given to it, if it has only an inscription; anepigraphic, if it has only an image. For the origin of the word see Epi-gram.

EPILEPSY (in Latin epilepsia, from the Greek ἐπιλέπτειν, to seize upon); a nervous disease, depending on various causes, often exceedingly complicated, and incapable of being removed; hence so often an incurable periodical disease, appearing in single paroxysms. If, for the most part, is preceded by a cold vapour (aura epileptica), creeping up from the foot or hand to the breast and head; but sometimes there are no premonitory symptoms. The patient suddenly falls, commonly with a cry, the thumb and forefinger being extended. Other parts are agitated more or less; and entire insensibility succeeds, the breath is short and quick, broken, and accompanied with groans, the mouth foams, the face is convulsed, the teeth grush together, the eyes are distended, the urine and other evacuations are discharged involuntarily, the eyes are wide open, the body remains in a state of intense light. The paroxysm is usually over in ten or twenty minutes. The patient awakes as from a deep sleep, entirely unconscious of what has passed; he feels nothing unpleasant, except fatigue, and a little pain in his limbs. Sometimes the paroxysms occur nine or ten times in an hour, or oftener; sometimes only once a month, at the change of the moon, or every six months, or at still longer periods. During the paroxysm, all that is to be attended to is to prevent the patient from injuring himself. All other attempts, such as forcing open the thumbs, and the like, are of no avail, except to terminate the paroxysm sooner, but, at the same time, occasion a quicker return of it, and render the disease more difficult to cure.

EPILOGUE (from the Greek εις, and λογος, word, speech); the closing address to the audience at the end of a play. The epilogue is the opposite of the prologue, and is usually an address to the spectators, and consists of a speech, which is delivered by the poet sometimes as a necessary appendage, to tell us something of a composition, which cannot be gathered from the composition itself. As it is very difficult to prevent prolongues and epilogues from sinking into mere common-places, and from injuring rather than aiding the play, they afford an opportunity for real genius to show its powers.

EPIMENIDES; a celebrated philosopher and poet of antiquity, born in Crete, in the 6th century before Christ. By some he is reckoned among the seven wise men, instead of Periander. He is represented as favoured with divine communications, and as an infallible prophet. When the Athenians were visited with war and pestilence, and the oracle declared that they had drawn on themselves the divine anger by the profanation of the temple, in which the followers of Cylon had been put to death, and must expiate their offence, they sent for Epime-
branch from the olive consecrated to Minerva. There is a story of his having slept in a cavern, according to some, forty years, and according to others, a still longer period. On awaking, he found, to his astonishment, everything changed in his native town.

He died in his native country, at an advanced age. This is related in a word by Goethe's poem, the Wakening of Epimenedes, for the anniversary of the battle of Leipzic.

EPIMETHEUS, in Greek mythology; a son of Japetus and Clymene; he married Pandora, by whom he had Pyrrha, the wife of Deucalion. (A.D. 151.) He is regarded by some as having had the curiosity to open the box which Pandora had brought with her, and from which issued a train of evils, that have ever since afflicted the human race. Hope alone remained in the bottom of the box, Pandora having shut it before she could escape, that she might comfort mortals after they had expiated their sins. It is to be remarked, that in this Greek tradition, curiosity and disobedience are made the origin of evil, as in the Mosaic account of the fall. See Pandora.

EPINAY, Louise (madame d'). This accomplished lady, in all the connections with Rousseau, was the daughter of M. Tardieu Desclavelles, who lost his life in Flanders, in the service of Louis XV., and left his family in very moderate circumstances. This, and the favour which Desclavelles had enjoyed at court, excited an interest for the daughter, and she was married to M. Delalive de Bellegarde, who received the office of farmer-general. But the extravagance of the young man soon disturbed the happiness which had been expected from this union. During the earlier part of her life, she formed an acquaintance with the philosopher of Geneva, who, quick and susceptible in all his feelings, devoted himself to the fascinating and accomplished woman with an ardour, the depth and strength of which he describes himself in his Confessions. She was not insensible to the homage of her bear, as she used to call him, on account of his eccentricities. She did all that was in her power to place him in a situation corresponding to his wishes. She gave him a cottage (the hermitage, since so famous) in her park of Chevettes, in the vale of Montmorency. Here the author of the Nouvelle Héloïse passed many days, rendered happy by his romantic attachment to madame d'Epinay; until he became jealous of baron Grimm, who had been appointed to the mistress; and in consequence of this feeling, which he took no pains to conceal, a coolness, and finally an aversion took place between him and the lady, which is but too plainly expressed in his Confessions. A defence of the later conduct of madame d'Epinay towards Rousseau may be found in Grimm's Correspondence, where an account is also given of some works written by her, of which the most celebrated is Les Conversations d'Émilie. In this the author, in a rather cold, but neat style, sets forth the principles of moral instruction for children, with equal elegance and depth of thought. It obtained, in 1783, the prize offered by Montiion (then chancelier to the count d'Artois) for useful works of this kind, in preference to the Aide et Théodore of madame de Genlis. She also wrote Lettres à mon Fils, and Mes Moments heureux. An abridgment of her highly interesting memoirs, and her correspondence, showing her merely to swell the bulk of the work, but not, however, connected with the subject, points out important consequences, or develops hidden causes. Of this kind is the narrative of the destruction of Troy, in Virgil's Aeneid. This was the cause of the hero's leaving his country, and wandering over the sea; but the poet does not commence with it, because he wishes
to bring the plot into a narrower space, in order to
make it more distinct and lively. He therefore
inserts it in the course of the story, but so skillfully,
that we expect it in this very place; and it not only
serves as a key to what has gone before, but prepares
us for what is to come, viz., the passion of Thile.
In this way, the episode becomes an essential part of the
whole, as it must necessarily be, if it is of any import-
tance to preserve the unity of the poem. So with
the tale in Wieland's Oberon; it appears incidental,
but explains to us the reason of Oberon's singular
interest in the fate of Huon. In epic poetry, there
is much more room for the episode than in dramatic,
where the poem is confined to a present action. The
term episode has also been transferred to painting,
especially historic painting, in a sense analogous to
that which it has in poetry.

EPITAPHE. See Architecture.

EPITAPH (from the Greek ἐπάθος, from ἐπι- upon, and τάφος, tomb); the inscription on a tomb-
stone. The Greeks applied this name to those
verses which were sung in memory of a deceased
person, on the day of his funeral, and on the anniversary
of this day. An epitaph should be characterized by
brevity and truth. Nothing can be farther from its
nature than the long-winded stories on tombs, often
as untrue as they are long, and which differ from
common prose in nothing but an arbitrary division
into long and short lines. The Germans have a
proverb, "He lies like a tombstone, and is as im-
pudent as a newspaper." The English are peculiarly
addicted to long epitaphs, relating a whole life, with
a catalogue of the merits of the deceased. An En-
lish churchyard affords much food for reflection.
It is plain, that the form of an epitaph should corre-
spond with the character of the subject of it. The
epitaphs of men who have performed great actions,
known to the whole world, or who have made dis-
coveries in science and art, which are acknowledged
by their age, should be as simple as possible, consist-
ing of little else than their name, which is, of itself,
ENOUGH to bring up a whole history to the memory
of the reader. Long panegyric and reflection are
out of place here. Who would not prefer, on a
tombstone erected to Washington, the single name
Washington, to any attempt to point out his merits?
The column erected to the memory of general Mas-
sen, who is buried in the cimetière de l'Est, in Paris,
contains only the word Massena. And simplicity is
equally essential to give effect to the record of the
gentle virtues of domestic life.

We will here give a few epitaphs deserving of
remembrance. One of the happiest is that of Sir
Christopher Wren, in St Paul's, London, of which he
was the architect:—

Sta, victor; horum caelest.
Step, traveller!—tis a hero thou hast seen on.

The Marchioness of Santa Cruz caused a monument
to be executed by Canova, for her daughter, inten-
ting it to cover also her own remains, with this inscrip-
tion:—

Mater infeliciissima fili et sibi.
Mater, the most unhappy mother—To her daughter and herself.

Count Tessin, governor of Gustavus III. of Sweden,
ordered the words—

Tandum fella.
Happy at last,
to be inscribed on his tomb. The following is Sir
Isaac Newton's epitaph:—

Isaacum Newton, Quem immortalem
Testantur Tempus, Nature, Calum,
Mortalem hoc Marmor
Puteus.

"This marble acknowledges Isaac Newton mortal, whom
time, nature, and heaven prove immortal."

The following couplet by Pope was intended for
Newton's monument:—

Nature and nature's law lay hid in night;
God said, Let Newton be—and all was light.

M. Ducis wrote the following epitaph on his friend
J. J. Rousseau, buried on the island in the lake of
Ermenonville.

Entire os peupliers pataleus,
Repose Jean Jacques Rousseau.
Approches, cœurs droits et sensibles,
Foire ami et dont sonse ce tombeau.

"Among those quiet poplars, repose Jean-Jacques Rou-
seau. Approach, true and sensitive hearts! your friend
sleeps under this tomb."

One of the simplest and saddest is that of pope Ad-
rian, written by himself:—

Adrianus, Papa, VI., hic stet est,
Qui nihil sibi infelicis
In vita,
Qui quodum imperaret,
Poeus.

"Pope Adrian VI. lies here, who experienced nothing
more unhappy in life than that he commanded."

The following epitaph, by doctor Johnson, on a cele-
brated musician, is extremely happy:—

Phillips, whose touch harmonious could remove,
The pangs of guilty power and hapless love,
Read, here, distressed by poverty no more;
Find here that calm thou gavst so oft before;
Sleep undisturbed within this peaceful shrine,
Till angels wake thee with a note like thine.

Here is also a fine epitaph, by Pope, on Mrs Cor-
bett, who died of a cancer in the breast:—

Here rests a woman, good without pretence,
Blest with plain reason and with sober sense,
No conques she, but o'er herself desired,
No arts essay'd, but not to be admir'd;
Passion and pride were to her soul unknown,
Convinc'd that virtue only is our own;
So unaffected, so composed a mind:
So firm, yet soft; so strong, yet so refin'd;
Heaven, as its purest gold, by tortures tried;
The saint sustain'd it, but the woman died.

But the finest we have ever read is the simple inscrip-
tion in St Anne's church, at Cracow, dedicated by
count Sierakowski to the illustrious Copernicus:—

Sta, sal, ne moriire.
"He commanded the sun to stand still."

The very words of Scripture, which were used as a
pretext for the persecution of the great truth which
he discovered, are here employed to form his
epitaph.

Epitaphs, notwithstanding the solemn circum-
stances with which they are associated, have not
unfrequently been made the vehicles of pleasantry, or of satire. Numerous examples of these might be given: 

On Mr Burbidge, the tragician:

"Exit Burbidge."

On Sparges, a miser:

"Here lies father Sparges, Who died to save charges."

On Mr Edmond Purdon, (by Goldsmith):

"Here lies poor Ned Purdon, from misery freed, Who long was a bookseller's hack; He led such a damnable life in this world, I don't think he'll ever come back."

On an Englishman, troubled with ennui:

Here lies Sir John Plum pudding, of Grange, Who hang'd himself one morning, for a change.

The quaint humour of doctor Franklin expressed itself in the following lines:

The body of Benjamin Franklin, printer, (like the cover of an old book, its contents torn out, and stripped of its lettering and gilding,) lies here, food for worms; yet the work itself shall not be lost; for it will (as he believed) appear once more a new and more beautiful edition, corrected and amended by the Author.

Similar to this, but much inferior, is the following on a watchmaker:

Here lies, in a horizontal position, the outside case of a watchmaker, Whose abilities in that line were an honour to his profession: Integrity was the main-spring and prudence the regulator, of all the actions of his life; Humane, generous, and liberal, his hand never stopt till he had relieved distress: So nicely regulated were his motions, that he never went wrong, Except when set a-going by people who did not know his key; Even then, he was easily set right again. He departed this life: wound up, In hopes of being taken in hand by his Maker, And of being thoroughly cleaned, repaired, and set a-going in the world to come.

Of satirical epitaphs, those of Burns are very pungent. The following on Piron, written by himself, in a spirit of revenge, against the French academy, is good:

Cit-glit Piron qui ne fut rien Pas même académicien.

Here lies Piron, who was nothing—not even an academicien.

The following is said to be found in Old Greyfriars, Edinburgh:

Cit-glit ma femme, fort bien Pour son repos et pour la mien."

"Here snug in grave, my wife doth lie, Now she's at rest, and so am I."

The following was made on Montmaur, a man of remarkable memory, but deficient in judgment:

Sous cette casaque noire Repose bien doucement Montmaur, d'honneur et mémoire, Attendant le jugement.

"In this black surcoat reposeth sweetly Montmaur, of happy memory, awaiting his judgment."

EPITHALAMIUM (from ɛpɪθælæmi.); a nuptial song. Among the Greeks and Romans, it was sung by young men and maidens at the door of the bridal chamber of a new married couple. It was accompanied with shouting and stamping with the feet. It consisted of praises of the bridegroom and bride, with wishes for their happiness. Among the Romans, the husband scattered nuts among the young men at the same time. Examples may be seen in Theocritus's epithalamium of Helen, and the epithalamium of Catullus.

EPITOME (from the Greek επίτομα, from επι, and τομα, I cut); an abridgment, an abbreviation, or compendious abstract.

EPOCH, or ERA, is a certain fixed point of time, made famous by some remarkable event, from whence, as from a root, the ensuing years are numbered or computed. As there is no astronomical consideration to render one epoch preferable to another, their constitution is purely arbitrary, and, therefore, various epochs have been used at different times and among different nations. The following article is from the Companion to the British Almanac for 1830:

It will render the comparison of eras much easier if we give some account of what is meant by a solar and a lunar year. A solar year is that space of time, during which the sun has passed all the seasons of his course. This takes place in 365 days, 5 hours, 48 minutes, and 49 seconds; and an approximation to that time has been adopted by those nations which have had sufficient astronomical science to determine it. But, as it would be impracticable to begin every new year at a different hour of the day, which different hour of the day, which would be necessary if the perfect year should always be completed before the commencement of a new one, 365 days have been taken as the length of a year, leaving the odd hours and minutes to accumulate until they amount to a whole day, when they are added to the year, making what is called a leap year, or intercalary year, of 366 days. The various ways of doing this will be detailed when we speak of the different eras. Some nations still use a year of 365 days, without any intercalation; and this is called a vague or erratic year, because its commencement varies through all the different seasons. A lunar year consists of 12 moons, or 354 days. This may be convenient enough for short periods, but is so ill adapted for the computation of a civilized nation, that none but Mohammedans have continued in the use of it, even for a little time. It suits the course of time so well, that its commencement varies, in a few years through all the seasons; and many more amongst the nations which use it can remember the fasts and festivals altering from summer to winter, and again from winter to summer, and their seed time and harvest alternately wandering from the beginning of the year to the end. The lunar year is that in which the months are regulated according to the course of the moon, but to which from time to time, a month is added, whenever the year would range too widely from its original situation. This year is inconvenient, from its varying duration; but as, in a long course of years, the months remain nearly at the same situation, it is less objectionable than the pure lunar year. It was the mode of computation of the Greeks and Romans, and is even now that of the Chinese, Tartars, Japanese, and Jews. All these varying modes render the comparison of dates much more difficult than it appears to be at the first view. We shall endeavour so far to simplify the calculation as to enable any arithmetician to compute, within a day or two, the eras of every nation, and to reduce them to the Christian era.

The Roman Era. The Roman year, in its arrangement and division, is that on which our year is entirely founded. The Romans reckoned their years from the date which some of their antiquaries chose to assign for the founding of Rome, viz. the 21st of April, in the second year of the sixth Olympiad, or
754 B.C. This era is designated by the letters, A. U. C., or AD vera conditio (from the building of the city). The first year used by them, and attributed to Romulus, consisted of ten months from March to December, or 304 days. (For an account of the Roman mode of computing time, see Calendar.) The Roman year has been adopted by almost all Christian nations, with no other variation than taking the birth of Christ as the commencement; instead of the building of Rome. If the given Roman year be less than 754, deduct it from 754; if the given Roman year be not less than 754, deduct 753 from it; the remainder gives the year (B. C. and A. D.), in the first and second cases respectively in which the Roman year commences.

Required the year 780 A. U. C.  

Deduct 783  

27 A. D.

Required the year 701 A. U. C.  

From 784  

Deduct 701  

53 B. C.

The Olympiads. The Greeks computed their time by the celebrated era of the Olympiads, which date from the year 776 B.C., being the year in which Coroebus was successful at the Olympic games. This era differed from all others in being reckoned by periods of four years instead of single years. Each period of four years was called an Olympiad; and, in marking a date, the year and Olympiad were both mentioned. The year was lunisolar, of twelve or thirteen months. The names of the months varied in the different states of Greece, but the Attic months are most usual. (For a further account of the Greek mode of computing time, see Calendar.) To reduce the date by Olympiads to our era, multiply the past Olympiad by four, and add the odd years; subtract the sum from 777 if before Christ, and subtract 776 from the sum if after Christ; the remainder will be the beginning of the given year. To decide on the exact day would be very difficult, on account of the alternations which the system has undergone. It will be perhaps sufficient to observe, that the year begins within a fortnight of the middle of July.—N.B. Some authors, as Jerome and Eusebius, have confounded the Olympiads with the era of the Seleucides, and computed them from the 1st of September.

The Christian Era.—The Christian era used by almost all Christian nations, dates from January 1st, the middle of the first year of the 19th Olympiad, paid in the 733d of the building of Rome, and 4714th of the Julian period. It was first introduced in the sixth century, but was not very generally employed for some centuries after. The Christian year, in its division, follows exactly the Roman year) consisting of 365 days for three successive years, and of 366 in the fourth year, which is termed leap year. This computation subsisted for 1000 years, throughout Europe, without alteration, and is still used by the followers of the Greek church: other Christians have adopted a slight alteration, which will be shortly explained. The simplicity of this form has brought it into very general use, and it is customary for astronomers and chroniclers, in treating of ancient time, to date back the same order from its commencement. There is, unfortunately, a little ambiguity on this head, some persons reckoning the year immediately before the birth of Christ as B. C. Some others noting it with 0, and the second year before Christ with 1, making always one less than those who use the former notation. The first is the most useful mode, and will be employed in all our computations. The Christian year (or Julian year), arranged as we have shown, was 111° 11' too long, amounting to a day in nearly 129 years; and, towards the end of the sixteenth century, instead of celebrating the church festivals had advanced ten days beyond the periods fixed by the council of Nice, in 325. It was in consequence ordered, by a bull of Gregory XIII., that the year 1582 should consist of 355 days only, which was effected by omitting ten days in the month of October, viz., from the 5th to the fourteenth; and, to prevent the recurrence of a like irregularity, it was also ordered, that, in three centuries out of four, the last year should be a common year, instead of a leap year, as it would have been by the Julian calendar. The year 1900 remained a leap year, but 1700, 1800, and 1900 were to be common years. This amended mode of computing was called the new style, and was immediately adopted in all Catholic countries, while the old style continued to be employed by other Christians. Gradually the new style was employed by Protestants also. The last ten days of 1600 were omitted by the Pro- testants of Germany, who, in consequence, began the year 1700 with the new style; and in England, the reformed calendar was adopted in the year 1752, by omitting eleven days, to which the difference between the styles then amounted. The alteration was ef- fected in the sixteenth century, the time of the Seleucides, and would have been the third being called the fourteenth. The Russians continued to use the old style till the year, 1830, when they adopted the new style.

To turn the Old Style to the New.

To reduce the year, 1797, to the old style, subtract 1000; the remainder is 797. Then, From the alteration of style to the 29th of February, 1700, add 10 days.  

From 1st of March, 1710, to 29th of February, 1900, 11  

" 1705, " 16  

" 1800, " 12  

" 1900, " 13  

" 1995, " 14  

Examples.

17th March, 1901, O. S., is 16th March, 1901, N. S.  

19th February, 1705, O. S., is 2d March, 1705, N. S.  

24th December, 1699, O. S., is 3d January, 1700, N. S.  

20th December, 1825, O. S., is 1st January, 1826, N. S.

There will sometimes be a difference of one year in a date, from the circumstance that, in many countries, the time of beginning the year has varied. In England, until the year 1752, the year was considered to begin on the 25th of March: any date, therefore, from the beginning of January to the 24th of March, is one year too little. It had been the practice, for many years preceding the change of style, to write both years, by way of obviating mistakes; as, 1st of February, 1705, or 1707, meaning the year 1705, if begun in January, or 1707, if begun in March. In some countries, Easter day was the first day of the year; in others, the 1st of March; and in others, again, Christmas day; but no certain rule can be given, as, even in the same nation, different provin- cesses followed a different custom. All nations, at present using either the old or new style, begin the year on the 1st of January.

The Creation has been adopted as an epoch by Christian and Jewish writers, and would have been found very convenient, by doing away with the difficulty and ambiguity of counting before and after any particular date, as is necessary when the era begins at a later period. But, unfortunately, writers are not agreed as to the precise time of commencing. We consider the creation as taking place 4004 years B. C.; but there are about 140 different variations in this respect.* The following are those that have been most generally used:—

The Era of Constantine. In this era the creation is placed 5508 years B. C. It was used by the Russians until the time of Peter the Great, and is still

* See Companion to the British Almanac for 1729, p. 49.
used in the Greek church. The civil year begins the first of September, and the ecclesiastical towards the end of March; the day is not exactly determined. To reduce it to ours, subtract 5502 years from January to August, and 5509 from September to the end.

Era of Antioch, and Era of Alexandria. We place these together, because, although they differed at their formation by ten years, they afterwards coincided. They were both in use by the early Christian writers attached to the churches of Antioch and Alexandria. In the computation of Alexandria, the creation was considered to be 5502 years before Christ, and, in consequence, the year 1 A.D. was equal to 5503. This computation continued to the year 284 A.D., which was called 5786. In the next year (285 A.D.), which should have been 5787, ten years were discarded, and the date became 5777. This is still used by the Abyssinians. The era of Antioch considered the creation to be 5402 years before Christ, and, therefore, the year 285 A.D. was 5777. As this was equal to the date of Alexandria, the two eras, failing also, the same manner, the year 285 of the Alexandrian era are reduced to the Christian era by subtracting 5502 until the year 5786, and after that time by subtracting 5492. In the era of Antioch, 5492 are always subtracted.

The Abyssinian Era. The Abyssinians reckon the beginning of the era in which they place the creation to be 54931 year before our era*; on the 29th of August, old style; and their dates will consequently exceed ours by 5492 years and 125 days. They have twelve months of thirty days each, and five days added to the end, called pagomen, from the Greek word μεταφορα (translated) (added). Another day is added at the end of every fourth year. To know which year is leap year, divide the date by four and, if three remain, the year will be leap year. It always precedes the Julian leap year by one year and four months. To reduce Abyssinian time to the Julian year, subtract 5492 years and 125 days. The Abyssinians also use the era of Martyrs, or Disceletan, with the same months as in the above.

The Jewish Era. The Jews usually employed the era of the Seleucides, until the fifteenth century, when a new mode of computing was adopted by them. Some insist strongly on the antiquity of their period, but generally declare it not to be more ancient than the century above named. They date from the creation, which they consider to have been 3760 years and three months before the commencement of our era. Their year is lunisolar, consisting either of twelve or thirteen months each, and each month of twenty-nine or thirty days. The civil year commences with or immediately after the new moon following the equinox of autumn. The average length of the year of twelve months is 354 days; but, by varying the length of the months Marchesvan and Chisleu, it may consist of 353 or 355 days according to the solar year. In nineteen years, twelve years have twelve months each, and seven years thirteen months. The following table of nineteen years will show the number of months in each year, as well as the first day of their year, reduced to the new style. The first day will not always be quite accurate, as certain lucky and unlucky days require the postponement of a day in some years. The year must be divided by nineteen, and the remainder will show the year of the cycle. If there be no remainder, it is the nineteenth year.

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* The Abyssinians place the birth of Christ in the 550th year of the creation, and consequently eight years after our era.

To reduce the Jewish time to ours, subtract 3761; and the remainder will show the year; the beginning of the year may be ascertained by the above table, and the months must be counted from that time. The ecclesiastical year begins six months earlier, with the month of Nisan. Consequently, when the given year is ecclesiastical, deduct a year in the Jewish era, from Nisan to Antioch. The Jews frequently, in their dates, leave out the thousands, which they indicate by placing the letters yem meaning μέρος “according to the lesser computation.” It will be unnecessary to mention the various other epochs that have taken place from the creation, as these are fixed on as the only ones that have been in general use.

The Era of Nabonassar received its name from that of a prince of Babylon, under whose reign astronomical studies were much advanced in Chaldea. The years are vague, containing 365 days each, without intercalation. The first day of the era is Wednesday, February 29th, 747 B.C. To find the Julian year on which the year of Nabonassar begins, subtract the given year, if before Christ, from 748, and if after Christ, add it to 747.

The Egyptian Era. The old Egyptian year was identical with the era of Nabonassar, beginning on the 26th February, 747 B.C., and consisting of 365 days only. It was reformed thirty years before Christ, at which period the commencement of the year had arrived, by continually receding, to the 29th of August, which was determined to be in the twenty-third year of the era. The Jewish years and months coincide exactly with those of the era of Disceletian. It appears from a calculation, that, in 30 B.C., the year must have begun on the 31st of August; in which case we must suppose the reformation to have taken place eight years earlier: however that may be, it is certain, that the 29th of August was the day adopted, and the number of the year one more than would have resulted from taking 747 as the commencement of the era. To reduce the Christian era, subtract 746 years 125 days. The old Egyptian year was in use for above a century after Christ; the reformed year being at first used only by the Alexandrian Church.

The Julian Period is a term of years produced by the multiplication of the lunar cycle 19, solar cycle 28, and Roman indication 15. It consists of 7980 years, and began 4713 years before our era. It has been employed in computing time, to avoid the puzzling ambiguity attendant on reckoning any period antecedent to our era, an advantage which it has in common with the mundane eras used at different times. By subtracting 4713 from the Julian period, our year is found. If before Christ, subtract the Julian period from 4714.

The Era of Disceletian, called also the Era of Mar-
tyrs, was much used by Christian writers until the introduction of the Christian era in the sixth century, and is still employed by the Abyssinians and Copts. It dates from the day when Diocletian was acclaimed emperor, at Chalcedon, 29th August, 284. It is called the Era of Martyrs, from the persecution of the Christians in the reign of Diocletian. The year consists of 365 days, with an additional day every fourth year. Divide the date by 4, and if 3 remain, the year is bissextile. It contains 12 months of 30 days each, with 4 additional in common years, and 6 in leap years. To reduce the years of this era to those of the Christian, add 283 years 240 days. When the Diocletian year is the year after leap year, it begins one day later than usual, and, in consequence, the day must be added to the Christian year, from the 29th of August to the end of the following February.

The Grecian Era, or Era of the Seleucides, dates from the reign of Seleucus Nicator, 311 years and 4 months before Christ. It was used in Syria for many years, and frequently by the Jews until the fifteenth century, and by some Arabs to this day. The Syrian Greeks began their year about the commencement of September; other Syrians in October, and the Jews about the autumnal equinox. We shall reduce to great accuracy in this era, the opinions of authors being very various as to its commencement. It is used in the book of the Macabees, and appears to have begun with Nisan. Their year was solar, and consisted of 365 days, with the addition of a day every fourth year. To reduce it to our era, subtract 311 years and 4 months. The Death of Alexander the Great dates from the 12th of November, 324, B. C.,† on which day the 425th year of Nabonassar began. This era was computed by years of 365 days, with a leap year of 366 days every fourth year, like the Julian year. The months were of 30 days each, with 5 additional. To compute it, deduct 323 from the given year, and the remainder will be the year of the Christian era. If before Christ, deduct the year from 324.

The Era of Tyre began the 19th of October, 125 B. C., with the month Hyperberetus. The months were the same as those used in the Grecian era. The year is similar to the Julian. To reduce it to our era, subtract 124; and if the given year be less than 125, deduct from 125, and the remainder will be the year before Christ.

The Casrean Era of Anisoch was used in Syria, by the Jews. The months are the same as those given under the Grecian era. The Greeks began with Gorpheus, September, in the year 49 B. C., and the Syrians with Tishri I., October, of 48 B. C.

The Era of Abraham is used by Eusebius, and begins the 1st of October, 2016 B. C. To reduce this to the Christian era, subtract 2015 years 3 months, and the remainder will be the year and month.

The Spanish Era, or Era of the Caesars, is reckoned from the 1st of January, 35 years B. C., being the year following the conquest of Spain by Augustus. It was much used in Africa, Spain, and the south of France. By a synod held in 1180, its use was abolished in all the churches dependent on Barcelona. Pedro IV. of Arragon, abolished the use of it in his dominions in 1350. John I. of Castile did the same in 1382. It continued to be used in Portu-
gal until 1455. The months and days of this era are identical with those of the Julian calendar; and, consequently, to turn this time into that of our era, we have only to add the date 38*, when Diocletian was proclaimed emperor, at Chalcedon, 29th August, 284. It is called the Era of Martyrs, from the persecution of the Christians in the reign of Diocletian. The year consists of 365 days, with an additional day every fourth year. Divide the date by 4, and if 3 remain, the year is bissextile. It contains 12 months of 30 days each, with 4 additional in common years, and 6 in leap years. To reduce the years of this era to those of the Christian, add 283 years 240 days. When the Diocletian year is the year after leap year, it begins one day later than usual, and, in consequence, the day must be added to the Christian year, from the 29th of August to the end of the following February.

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* Diocletian was not, in reality, proclaimed until some months after this time.
† This would be more accurately 323 B. C. but the above date is more usually adopted.

The Mohammedan Era, or Era of the Hegira, dates from the flight of Mohammed to Medina, which event took place in the night of the 15th of July, 622. The era commences on the following day, viz., the 16th of July. Many chroni-
logists have computed this era from the 15th of July, but Cantemir has given examples, proving that, in most ancient times, the 15th was the first day of the era; and now there can be no question, that such is the practice of Mohammedans. The year is purely lunar, and, like the Persian, commencing with the appearance of the new moon, without any intercalation to bring the commencement of the year to the same season. It is obvious, that, by such an arrangement, every year will begin much earlier in the season than the preceding, being now in summer, and, in the course of 10 years, in winter. Such a mode of reckoning, so much at variance with the order of nature, could scarcely have been in use beyond the pastoral and semi-barbarous nation by whom it was adopted, without the powerful aid of fanaticism; and even that has not been able to prevent the use of other methods by learned men in their computations, and by governments in the collection of revenue. It will also be remarked, that, as the Mohammedans begin each month with the appearance of the new moon, a few cloudy days might retard the command of the moon, making the month even one day longer than usual. This, in fact, is the case, and two parts of the same country will sometimes differ a day in consequence; although the clear skies of these countries where Islamism prevails rarely occasion much inconvenience in this respect. But, as in all these calculations, as well as in all documents, they use months of 30 and 29 days, alternately, making the year thus to consist of 354 days: eleven times in 30 years, one day is added to the last month, making 355 days in that year. Consequently the average length of a year is taken at 354.04 days, the 12th of which is 29.51 days, differing very little more than 3 seconds, which will not amount to a day in less than 2260 years—a degree of exactness which could not have been attained without long continued observations. The intercalary year of 355 days occurs on the 20, 4th, 7th, 10th, 13th, 16th, 19th, 22nd, 25th, 28th, and 31st of every 30 years. Any year being given, to know whether it be intercalary or not, divide by 30, and if either of the above numbers remain, the year will be one of 355 days. To reduce the year of the Hegira to that of the Christian, the following mode, though not strictly correct, is sufficiently accurate. The Mohammedan year being a lunar year of 354 days, 33 such years will make 32 of ours. We have only, then, to deduct one year for each 33 in any given number of Mohammedan years, and add 622 (the year of our era, from which their computation commences), and we obtain the corresponding year of the Christian era.

*Indians Chronology.* The natives of India use a great variety of epochs, some of which are but little understood, even by themselves, and almost all are deficient in universality and uniformity, so that the same epoch, nominally, will be found to vary many days, or even years, in different provinces. The ecclesiastical, or, more properly, the sidereal, is that which is most in use for public business, particularly since the introduction of European power into India. This year is calculated by the Indian astronomers at 365 days, 6 hours, 12 minutes, 30 seconds, or, according to others, 36 seconds. Therefore, in 60 Indian years, there will be a day more than in 60 Gregorian years. The difference arises from not taking into consideration the precession of the equinoxes, which is equal, in reality, to something more than 20 minutes, though by them calculated at 5 minutes. The lunar year is not at present so common as it formerly was, although still much used in some parts of India, and common everywhere in the regulation of festivals, and in domestic arrangements.

Both the solar and luni-solar forms may be used with most of the Indian eras, though some more particularly affect one form and some the other. The luni-solar mode varies in different provinces, some beginning the month at full moon, others at new moon. We shall here consider that which commences with the appearance of the new moon which is used in Bengal; the other method will be easily understood when this is known. Each year begins on the day of full moon preceding the beginning of the solar year of the same date. The months are divided into halves, the first of which is entitled *lauti,* or dark, being from the full moon to the new; and the last, *nudi,* or bright, from new to full moon. These divisions are sometimes of 14 and sometimes of 15 days, and are numbered generally from 1 to 15, though the last day of the lalai half is called 15, and that of suddi is called 30. By a complicated arrangement, a day is sometimes omitted, and again a day is intercalated, so that, instead of going on regularly in numerical order, these days may be reckoned 1, 1, 2, 3, 4, 5, 6, 7, 8, 10. The subject is enveloped in some obscurity; and it will be, perhaps, sufficient to observe, that the time of a luna tion is divided into 30 parts, called *tithe,* and, when two tithes occur in the same solar day, that day is omitted in the lunar reckoning, and restored by intercalation at some other period. When two full moons occur in one solar month, the month also is named twice, making a year of thirteen months. In the case, also, of a short solar month, in which there should be no full moon, the month would be altogether omitted. All these circumstances render the luni-solar computation a matter of much difficulty; and to reduce it exactly to our era, would require a perfect knowledge of Hindoo astronomy. But as the solar reckoning of the era next beginning by the full moon is easily observed, that the lunar month precedes the solar month by a luna tion at most; and consequently a lunar date may be nearly known from the solar time, which is of easy calculation. The eras which are generally known are the following:

The Caliug. This era is the most ancient of India, and dates from a period 3101 years before Christ. It begins with the entrance of the sun into the Hindoo sign Aswin, which is now on the 11th of April, N. S. In the year 1000, the year began on the 7th of April, B. S., from which it has now advanced four days, and, from the progression of the equinoxes, is still advancing at the rate of a day in sixty years. The number produced by subtracting 3102 from any given year of the Caliug will be the Christian year in which the given year begins.

The Era of Salwahana may be joined here to that of the Caliug, being identical with it as to names of months, divisions, and commencement, and differing only in the date of the year, which is 3179 years more recent than that, and therefore 77 years since our era. It is much used in the southern and western provinces of India, and papers are frequently dated in both eras. The year is called *Saca.* The number 77 must be added to find the equivalent year of the Christian era. Both these eras are most commonly used with solar time.

The Era of Varannudita, which has its name from a sovereign of Malwa, may also be placed here, as it uses the same months as the two above mentioned; but it is more generally used with lunar time. This era is much employed in the north of India, and its years are called *Samvat.* It began 57 years before Christ; and that number must be deducted to bring it to our era. This era is not at present so common as it formerly was, although still much used in some parts of India, and common everywhere in the regulation of festivals, and in domestic arrangements.
the total, in common years, and 366 in leap years. The intercalation is made when and where it is required, not according to any arbitrary rule, but by continuing the length of each month until the sun has completely passed each sign. This will bring about 26 leap years in every century. It would require long and complicated calculations to find exactly the commencement and duration of each month, but we shall not err more than a day or two by considering them to be of 30 and 31 days alternately.

The Bengalee year appears to have been once identical with the Hegira; but the solar computation living subsequently been adopted, of which the years exceed those of the Hegira by 11 days, it has lost nearly 11 days every year, and is now about 9 years later, the year 1245 of the Hegira beginning in July, 1829, and the Bengalee year 1256 beginning 13th of April of the same year. The number 593 must be added to bring this to the Christian era.

The Chinese, like all the nations of the north-east of Asia, reckon their time by cycles of 60 years. Instead of numbering them as we do, they give a different name to every year in the cycle. As all these nations follow the same system, we shall detail it here more particularly. They have two series of words, one of ten, and the other of twelve words; a combination of the first words in both orders is the name of the first year; the next in each series are taken for the second year; and so on to the tenth; in the eleventh year, the series of ten being exhausted, they begin again with the first, combining it with the eleventh of the second series; in the twelfth year, the second word of the first series is combined with the twelfth of the second; for the thirteenth year, the combination of the third word of the first list with the first of the second list, is taken, that list also being now exhausted. To make this clearer, we shall designate the series of ten by the Roman letters, that of twelve by the italics, and the whole cycle of 60 will stand thus:—

The series of 10 is designated in China by the name of tien kan, or celestial signs. The Chinese months are lunar, of 29 and 30 days each. Their years have 12 months, as ours, but a 13th is added whenever there are two new moons while the sun is in one sign of the zodiac. This will occur seven times in nineteen years. The boasted knowledge of the Chinese in astronomy has not been sufficient to enable them to compute their time correctly. In 1890 A. D., the Arab Jesuit Steno composed a calendar for them, which remained in use until the time of the Jesuit Adam Schaal, who was the director of their calendar until 1664. It then remained for five years in the hands of the natives, who so deranged it, that, when it was again submitted to the direction of the Christians, it was found necessary to expunge a month to bring the commencement of the year to fall in the proper season. It has since that time been almost constantly under the care of Christians. The first cycle, according to the Roman missionaries, began February 2397 B.C.* To find out the Chinese time, multiply the elapsed cycle by 60, and add the odd years; then, if the time be before Christ, subtract the sum from 2398; but if after Christ, subtract 2397 from it; the remainder will be the year required. The Chinese frequently date from the year of the reigning sovereign; and in that case, there is no way of having the corresponding date, but by a list of emperors. We subjoin a list of those who have reigned for the last two centuries:—

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<td>1810</td>
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The Japanese have a cycle of 60 years, like that of the Chinese, formed by a combination of words of two series. The series of ten is formed of the names of the elements, of which the Japanese reckon five, doubled by the addition of the masculine and feminine endings je and to. The cycles coincide with those of the Chinese; but a name is given to them instead of numbers. Their years are lunisolar, and are lunisolar, of 12 and 13 months, with the intercalations as before mentioned under the head of China. The first cycle is said to begin 660 B.C.; but this cannot be correct, unless some alteration has taken place, as the Chinese cycle then began 657 B. C. We know, however, too little of Japan to pronounce positively respecting it; but thus far it is certain, that the cycle now coincides with that of the Chinese.

To an article of this nature it may not be thought superfluous to append a slight notice of the manner in which some of the aboriginal tribes of America reckoned their time before its discovery by the natives of Europe. The science of astronomy seems to have advanced there to a much greater extent than is commonly imagined. The extraordinary accuracy of the Mexicans in their computations, surpassing that of the Europeans of their time, cannot be accounted for otherwise than by the supposition that they had derived it from some people more civilized than themselves; and would appear incredible, if not well attested by Spanish authors of the fifteenth century, as well as by many hieroglyphic almanacs yet remaining. The aboriginal antiquity of the Peruvians and Muyscas had lunar years of great accuracy also; but this is less surprising, as the phases of the moon are sufficiently visible to the eye, and their returns frequent. We shall detail that of the Mexicans only.

The year of the Mexicans consisted of 365 days, it was composed of eighteen mouths of twenty days each, and five additional, called nemontemi, or void. At the end of a cycle of 52 years, 13 days were added, and at the end of another cycle 12 days, and so on, alternately, making an addition of 25 days in 104 years. This made the mean year to consist of 365 days, 6 hours, 46 minutes, 51 seconds, being only 2' 39" 57' shorter than the truth. As the wanton destruction of the Mexican monuments and hieroglyphic records, by their cruel and barbarous conquerors, has left little to study, and the extermination of the Mexicans of superior order has done away with their system, we shall not detail the names of their months.

* Dr Morrison carries it back to the sixty-first year of Hwang-te, 2906 B. C., making the present year to fall in the seventy-fourth cycle; but, according to the celebrated historian Chofoozoo, Hwang-te reigned about 2700 B. C., making 754 cycles for that period, which is probably, more correct than either of the above statements.
and particulars of their cycles, which afford striking coincidences with those of the Tartars, Japanese, &c. We shall only add, that their first cycle began in the month of January, A.D. 1000.

List of the Correspondence of Eras with the year 1833.

[When the commencement of the year coincides with the Christian year, the epoch begins at the same moment. If it begins to a later date, the month in which the 1st of January, 1833, occurs will be also stated.]

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<tr>
<th>Year</th>
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EPODE.—EQUATION.

EPODE (Latin epode, from the Greek ἐποδή, from ἐπέδα, I sing); the last division in the choral song of the ancients, which was sung when the chorus, after the strophe and antistrophe, had returned to its place (see Chorus); so that it was a kind of closing song, or finale. This epode had a peculiar measure, and an arbitrary number of verses. By the term epode is also understood a sort of pastoral ode; according to Hephhestion, one which has longer and shorter iambic verses, following each other alternately. This name is also given to the fifth book of the oracles of Horace. All the odes in this book, however, are not satirical, and Scaulger therefore supposed that the name here is taken to apply to the odes: the epodes having been joined to the other works of the poet after his death.

EPOPEE. See Epic.

EPOPEIA (from the Greek ἐποπεία, I see); inspectors, or spectators, i. e., initiated; a name given to those who were admitted to view the secrets of the greater mysteries, or religious ceremonies of the ancient Greeks.

EPPING, a town in Essex, situated seventeen miles from London, on the road to Newmarket, and in the midst of a forest to which it gives name. Population of town and parish in 1831, 2312.

ÉPROUYETTE; the name of a machine for ascertaining the strength of fired gunpowder, or of comparing the strength of different kinds of gunpowder. One of the best, for the proof of powder in artillery, is that contrived by doctor Hutton. It consists of two small brass guns about 29 feet long, suspended by a metallic stem, or rod, turning by an axis, on a firm and strong frame, by means of which the piece oscillates, in a circular arch. A little below the axis, the stem divides into two branches, reaching down to the gun, to which the lower ends of the branches are fixed; the mass between the two and the other near the breech of the piece. The upper end of the stem is firmly attached to the axis, which turns very freely by its extremities in the sockets of the supporting frame, by which means the gun and stem vibrate together in a vertical plane, with a very small degree of friction. The piece is charged with a small quantity of powder (usually about two ounces) without any ball, and their fired; by the force of the explosion, the mass is made to vibrate, and in describing an arc or angle, which will be greater or less according to the quantity or strength of the powder.

EPSON; a place in England, fourteen miles south of London, in Surrey, celebrated for its medicinal springs, of a purgative quality, discovered in 1818, and for the downs, on which horse-races annually take place. Near it Henry VIII. built a splendid palace, called Nonsuch. Population of parish in 1831, 3231.

EPSON SALT (sulphate of magnesia, cataphatic salt) appears in capillary fibres or acicular crystals; sometimes presents minute prismatic crystals; the fibres are sometimes collected into masses; and it also occurs in a loose, mealy powder: its colour, white, grayish, or yellowish: it is transparent, or translucent, with a saltish, bitter taste. It is soluble in its own weight of cold water, and effloresces on exposure to the air. It is composed of water, sulphate of magnesia, and magnesia. It is found covering the crevices of rocks, in caverns, old pits, &c., in the vicinity of Jena, on the Harz, in Bohemia, &c., in mineral springs, in several lakes in Asia, and in sea-water. It is obtained for use from these sources, or by artificial means employed in medicine, as a purgative. The English name is derived from the circumstance of its having been first procured from the mineral waters at Epsom. See Magnesia.

EQUATION, in algebra, is the expression of the equality of different indications of the same magnitude; as, for instance, 9 and 2 are equal to 11, in mathematical characters is expressed thus: 9 + 2 = 11; or, 3 from 4 leave 1, is 4 — 3 = 1. An equation may contain known quantities and unknown quantities. The latter are usually indicated by the last letters of the alphabet; and it is one of the main objects of mathematics to reduce all questions to equations, and to find the value of the unknown quantities by the known, which is sometimes a difficult, but, at the same time, interesting operation; because x, or the unknown quantity, may be given in order that we may know how to as to require the greatest tack to determine its value.

When a problem is proposed for solution, the first thing to be done, is to express the condition of all the quantities known and unknown in algebraic language. The next step is to obtain a distinct equation for each of the unknown quantities. The terms of an equation are frequently in the form of powers and roots, the unknown quantity being sometimes a square, cube, biquadratic, &c., and thus equations are distinguished into degrees. Thus $a = 2 b - c$ is an equation of the first degree; however the unknown quantity $x$ is not involved; $x^2 = 15 + 9$ is an equation of the second degree, the unknown quantity $x$ being involved to the second power, &c. Equations are also either pure or affected. They are pure when the unknown quantity occurs only in one power, as $x^2 + 47 + 18$ or $x^2 = 19 + 6$; but they are said to be affected when the unknown quantity occurs in different powers, as $x^2 + 2 x = 15 - 2 a$, or $x^2 + 2 x + x^2 + 5 x = 19 + 143$. The great object of algebra is to enable us to simplify the structure of an equation without altering the value of any of its quantities, until we arrive at the most simple form, where the unknown quantities are not involved in any equation alone, and unresolved, and its value at the other side.

Equation in Astronomy: any quantity to be added to, or subtracted from, the mean motion of any heavenly body, in order to determine its true place
at any given time. Thus we have the equation of the centre, a quantity to be added to or subtracted from the anomaly, in order to determine the true position of the body, thus: let the curve 

\[ ECF \]

represent the earth's orbit (which is an ellipse), \[ E \] the line of the asides, and \[ A \] the position of the sun. When the earth is in any position as \( C \), the line \( AC \) drawn from the sun to the planet is the radius vector, then will the angle \( CAF \) be the anomaly, or the angular distance from the perihelion. Were the earth's motion uniform, the increase or decrease of this angle would be equal in equal times, and the mean anomaly would be the true anomaly; but the earth's motion is retarded, as it advances from \( F \) to \( C \), is slowest at \( E \), and is accelerated from that point, the apsidal, through the other half of its orbit till it arrives at \( F \), the perihelion. The quantity to be added to the mean angular motion, during one portion of the orbit, or subtracted from it in the other, in order to find the true anomaly, is called the equation of the centre.

**EQUATION OF PAYMENTS,** in arithmetic, is the finding the time to pay at once several debts due at different times, and bearing no interest till after the expiration of the time to that payment. The rule commonly given for this purpose is as follows:—Multiply each sum by the time at which it is due; then divide the sum of the products by the sum of the payments, and the quotient will be the time required. Thus, for example, 10000 is to be paid as follows; viz. £20 at six months, £60 at seven months, and £80 at ten months: what is the equated time at which the whole is to be paid, that no loss may arise, either to debtor or creditor? By the rule, 

\[
\begin{align*}
90 \times 6 &= 540 \\
90 \times 7 &= 630 \\
90 \times 9 &= 810
\end{align*}
\]

This rule, however, is founded on a supposition, that the interest of the several debts which are payable before the equated time, from their terms to that time, ought to be equal to the sum of the interest of the debts payable after the equated time, from that time to their terms respectively, which, however, is not correct, as it is the discount that is to be considered, and not the interest. In the majority of cases, however, that occur in business, the error is so trifling, that the popular rule will probably always be made use of, as being by far the most eligible and expeditious method that we could suggest.

**EQUATION OF TIME,** in astronomy, denotes the difference between mean and apparent time, or the reduction of the apparent unequal time, or motion of the sun or a planet, to equable and mean time or motion. If the earth had only a diurnal motion, without an annual, any given meridian would revolve from the sun to the sun again in the same space of time as from any star to the same star again, because the sun would never change his place with respect to the stars. But as the earth advances almost a degree eastward in its orbit in the time that it turns eastward round its axis, whatever star passes over the meridian on any day with the sun, will pass over the same meridian on the next day, when the sun is almost a degree short of it, that is, 3 minutes 56 seconds sooner. If the year contained only 360 days, as the ecliptic does 360 degrees, the sun's apparent place, as far as his motion is equable, would change a degree every day, and then the sidereal days would be 4 minutes shorter than the solar. The mean and apparent solar days are never equal, except when the sun's daily motion in right ascension is 60°; which occurs nearly the 15th of April, the 15th of June, the 1st of September, and 24th of December, when the equator is 'O, or nearly so; and it is at its greatest about the 1st of November, when it is 10° 14'.

**EQUATOR.** By the celestial equator is understood that imaginary great circle in the heaven, the plane of which is perpendicular to the axis of the earth; it is everywhere 90° distant from the poles of the earth, which are therefore its poles, and its axis is the axis of the earth. It divides the celestial sphere into the northern and southern hemispheres. During his apparent yearly course the sun is twice in the equator, at the beginning of spring and of autumn. (See _Equinox, and Day._) Then the day and night are equal,—whence the name of _equator._ The situation of the stars, with respect to the equator, is determined by their declination and right ascension (q. y.). The equator, or equinoctial, called by mariners simply the _line_, is that great circle of our globe, every point of which is 90° degrees from the poles, which are also its poles, and _is_ the axis of the earth. It is in the plane of the earth's equator, on which all planets, when on it, have invariably equal days and nights. (See _Day._) Our earth is divided by it into the northern and southern hemispheres. The diurnal revolution of the earth is in the direction of it. It crosses the centre of Africa, the islands of Sumatra, Borneo, Celebes, &c., in Asia, then traverses the Pacific ocean, and crosses South America, in Columbia, thence proceeds through the Atlantic back to Africa. To cross the line, in navigation, is to pass over the equator. The equatorial regions are subject to long calms, alternating with frightful hurricanes. As equal or mean time is estimated by the passage of arcs of the equator over the meridian, it frequently becomes necessary to convert parts of the equator into time, and the converse, which is performed by the following analogy, viz.—as 15° : 1 hour :: any arc of the equator: the time it has been in passing. Or, conversely, 1 hour : 15° : : any given time to the arc of the equator.—From this circle is reckoned the latitude of places, both north and south, in degrees of the meridian. See _Latitude and Longitude._

**EQUATORIAL, UNIVERSAL, or PORTABLE OBSERVATORY** is an instrument intended to answer a number of astronomical purposes upon the order of _equation of time._

**EQUESTRIAN ORDER,** in Roman antiquities (ordo equestris.) The _equites_ did not at first form a distinct order, but were merely selected, one hundred from each tribe, as the body-guard of the king and were called _celeres_, because they were mounted. Their number was afterwards increased; but when the _equites_ became a distinct order, or class, was not known with certainty; it was probably soon after the expulsion of the kings. None but those who were named by the king belonged to it. Those who were named and were _equites_, as being of illustrious descent were called _illustres_, _speciosi_, &c. Their number was not fixed. In the latter periods of the republic, property of the value of 400 _sesteria_ was required for admission into it. The privileges of a knight or _equus_ were, _l._
to receive a horse from the state; 2. a gold ring (hence annulo aureo donari, i. e. to be made a knight); 3. angustus clausus, a narrow strip of purple on the tunic; 4. a particular sent on public occasions from the king in war; but, at a later period, they became judges, and farmers of the public revenues. Caius and Tibertius Gracchus wrested the right of being judges from the senate, and gave it to the equites. Some authorities take the elevation of the equites to a third class at this period. Every fifth year, the censor held a review of the equites, on which occasion they passed before him, leading their horses. If any one of their number had been guilty of any offence, even if he had only neglected his horse, the censor ordered it to be sold, which was equivalent to degrading him from the order; hence adinere equum, to degrade a knight. Others, who had committed slighter offences, for which they were to be deprived of their rank, were omitted in the list, which was read aloud by the censor. The first on the list was called princeps. The farmers of the revenue were divided into circle, by their arid months, attitudes, lepites, &c. Every rope-dancer is an equilibrist. India is the native country of equilibrists; and the accounts given by travellers of the Indian balancers border on the incredible. The French, too, are distinguished as equilibrists. Such performers are met with in all the large cities of Europe and America. The equilibrist are frequently also buffoons, jugglers, conjurers, &c. EQUINOCTIAL, in astronomy; a great circle of the sphere, under which the equator moves in its diurnal motion. It is the same as the celestial equator. See Equator.

EQUINOCTIAL GALES; storms which are observed generally to take place about the time of the sun's crossing the equator or equinoctial line, at which time there is equal day and night throughout the world.

EQUINOCTIAL POINTS are the two points wherein the equator and ecliptic intersect each other; the one, being in the first point of Aries, is called the vernal point; and the other, in the first point of Libra, the autumnal point.

EQUINOX is that time of the year when the day and night are equal; the length of the day is then twelve hours; the sun is ascending six hours, and descending the same time. This is the case twice a year, in spring and in autumn, when the sun is on the equator. When the sun is in this situation, the horizon of every place is divided into two equal parts by the circle bounding light and darkness; hence the sun is visible everywhere twelve hours, and invisible for the same time in each twenty-four hours. (See Day.) The vernal equinox is on the 21st March, and marks the beginning of spring, the autumnal is on the 23rd September, which is considered the commencement of autumn; at all other times, the lengths of the day and of the night are unequal, and their difference is the greater the more we approach either pole, and in the same latitude it is everywhere the same. Under the line, this inequality entirely vanishes: there, during the day, which is equal to the night, the sun's rays ascend six hours, and descend six hours. In the opposite hemisphere of our earth, the inequality of the days increases in proportion to the latitude: the days increase there, while they diminish with us, and vice versa. The points where the ecliptic comes in contact with the equator are called equinoctial points. The vernal equinoctial point was formerly at the entrance of the constellation of Aries; hence the next thirty degrees of the ecliptic, reckoned eastward from the equinoctial point is called the precession of the equinoxes. (See Precession.) It appears from the result of calculations, that the path of either of the poles is a circle, the poles of which coincide with those of the ecliptic, and that the pole will move along that circle so slowly as to accomplish the whole revolution of about 25,791 years, nearly. The diameter of this circle is equal to twice the inclination of the ecliptic to the equator, or about forty-seven degrees. Now, as the ecliptic is a fixed circle in the heavens, but the equator, which must be equidistant from the poles, moves with the poles, therefore the degree in which the ecliptic crosses the equator in its intersection with the ecliptic. And from the best observations, it appears, that the equator cuts the ecliptic every year 50°25 seconds more to the east than it did the year before; hence the sun's arrival at the equinoctial point precedes its arrival at the equator in the same period of time by twenty minutes twenty-three seconds of time, or by an arc of 50°25 seconds. Thus, by little and little, these equinoctial points will cut the ecliptic more and more to the westward, till, after 25,791 years, they return to the same point. EQUISETUM; a genus of plants, belonging to the Linnean class Monadagoga. The species are very common in wet places, and are commonly called horse-tails. The fructification is in terminal oval or conical heads, composed of peltate scales; the seeds numerous and very minute; the stem simple or branched, striate, and composed of articulations, each surrounded at base with a scious sheath, which is toothed on the margin; the branches are verticillate and destitute of leaves. The E. hyemale (shavegrass or scouring-rush) has a remarkably tough stem, and is used for polishing wood, ivory, and the metals; for this purpose it is cut into pieces, and stuck into the hollow of the stem, which is then rubbed against the substance under operation. The asperity of the cuticle is owing to its containing a proportion of silex. Being a rare plant in England, it is imported in considerable quantities from Holland, and is an article of commerce in other parts of Europe: the value of that exported from the Rhone is estimated at nearly £450 annually.

EQUITY. We call that, in a moral sense, equity, which is founded in natural justice, in honesty, and in right ex quo et bono. So, in an enlarged view (as Mr Justice Blackstone has observed, 3 Comm. 450), "equity, in its true and genuine meaning, is the soul and spirit of all law; positive law is constrained, and rational law is made by it. In this equity is synonymous with justice; in that, to the true and sound interpretation of the rule." Hence Grotius has defined it to be the correction of that wherein the law, by reason of its generality, is deficient. It is applied to cases which the law does not exactly define, but which it submits to the sound judgment of the proper interpreter, arbitrio boni viri permittiti. In this sense, equity must have a place to it, have been acted upon, and have justice, but in name, at least in substance. It is impossible, that any code, however minute and particular, should embrace or provide for the infinite variety of human affairs, or should furnish rules
applicable to all of them. Every system of laws must necessarily be defective; and cases must occur, to which the antecedent rules cannot be applied without injustice, or to which they cannot be applied at all. It is therefore, of course, to consider whether the antecedent rule does apply, or ought, according to the intention of the lawgiver, to apply to a given case; and, if there be two rules, nearly approaching to it, but of opposite tendency, which ought to govern; and, if there exist no exact rule applicable to all the circumstances, neither the party in interest furnishing the closest analogy ought to be followed. The general words of a law may embrace all cases; and yet it may be clear that all could not have been intentionally embraced; for, if they were, it would defeat the obvious objects of the legislation. So words of doubtful import may be employed, and of a more or less extensive meaning. The question, in such cases, must be, in what sense the words were used; and it is the part of a judge to look to the objects of the legislation, and to give such a construction of the words as will further those objects. He is not at liberty to set aside the law for the purpose of suit. Courts must, it seems, impose an intention on the acts of the legislature, otherwise the words "law" and "lump" or "sum" could never be distinguished.

But it ought not to be supposed that the matter is to be determined as a question of law; for the courts, either by reason of the nature of the case, or of the objection taken, are incapable of determining the question, unless they are informed of the antecedent facts. It is to be shewn how far they have proceeded, and what the antecedent facts are; and only upon the full evidence of those facts will the court be able to decide. It is not within the province of a court of law to give a decision before the facts are heard and considered.

The most general description of a court of equity is, that it is a court of record, in which a plain, adequate, and complete remedy cannot be had; which is, in the common law courts. The remedy must be plain, for, if it be doubtful and obscure at law, equity will assert a jurisdiction. So it must be adequate at law; for, if it be short of what the party is entitled to, that founds a jurisdiction in equity. And it must be complete; that is, it must attain its full end at law; it must reach the whole mischief, and secure the whole right of the party, now and for the future; otherwise equity will interpose, and give relief.

The jurisdiction of a court of equity is sometimes concurrent with that of courts of law; and sometimes it is exclusive. It exercises concurrent jurisdiction in cases where the rights are purely of a legal nature, but where other and more efficient aid is required than a court of law can afford, to meet the difficulties of the case, and ensure full redress. In some of these cases, courts of law formerly refused all redress; but now equity will grant it. If a court of equity having been once justly acquired at a time when there was no such redress at law, it is not now relinquished. The most common exercise of concurrent jurisdiction is in cases of account, accident, dower, fraud, mistake, partnership, and partition. The remedy is here often more complete and effectual than it can be at law. In many cases falling under these heads, and especially in some cases of fraud, mistake, and accident, courts of law cannot and do not afford any redress; in others they do, but not always in so perfect a manner. A court of equity also is assistent in the jurisdiction of the courts of law, in many cases, where the latter have no like authority. It will remove legal impediments to the fair decision of a question depending at law. It will prevent a party from improperly setting up, at a trial, some title or claim, which would be inequitable. It will compel him to discover, on his own oath, facts which he knows to be material to the right of the other party, but which a court of law cannot compel the party to discover. It will perpetuate the testimony of witnesses to rights and titles, which are in danger of being lost before the matter can be tried. It will provide for the safety of property in dispute pending litigation. It will correct the omission of a party to give notice or answer. It will compel the party to make diligent judgments. It will exercise, in many cases, an exclusive jurisdiction. This it does in all cases of merely equitable rights, that is, such rights as are not recognised in courts of law. Most cases of trust and confidence fall under this head. Its exclusive jurisdiction is also extensively exercised in granting special relief beyond the reach of the common law. It will grant injunctions to prevent waste, or irreparable injury, or to secure a settled right, or to prevent vexatious litigations, or to compel the restitution of title deeds; it will appoint receivers of property, where it is in danger of misapplication; it will compel the surrender of securities improperly obtained; it will prohibit a party from leaving the country in order to avoid a suit; it will restrain any undue exercise of a legal right, against conscience and equity; it will decree a special performance of contracts respecting the administration of property, in many cases to apply the imperfect execution of instruments, and reform and alter them according to the real intention of the parties; it will grant relief in cases of lost deeds or securities; and, in all cases in which its interference is asked, its general rule is, that he who asks equity must do equity. If a party, therefore, should ask to have a bond for an

EQUITY.
EQUITY OF REDEMPTION—EQUIVALENTS.

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debt given up, equity could not decree it unless he could bring into court the money honestly due without usury. This is a very general and imperfect outline of the jurisdiction of a court of equity; in respect to which it has been justly remarked, that, in matters within its exclusive jurisdiction, where substantial justice entitles the party to relief, but the positive law is silent, it is impossible to define the boundaries of that jurisdiction, or to enumerate, with precision, its various principles. Those who wish for more information on the subject may consult the elementary treatises of Fonblanque on Equity, lord Redesdale's Treatise on Equity Pleadings, and Cooper's Equity Pleadings; and the Practical Treatises of Equity by Maddock and Jeremy.


EQUITY OF REDEMPTION. Upon a mortgage, although the estate, upon nonpayment of the money, becomes vested in the mortgagee, yet equity considers it only a pledge for the money, and gives the party in whose favor it is made the right to redeem, his mortgagee either to pay the money or be foreclosed of his equity, which is done by proceedings in chancery by bill of foreclosure. See Mortgage.

CIVIL LAWS; a term employed in chemical philosophy, to express the system of definite ratios, in which the corpuscular subjects of this science reciprocally combine, referred to a common standard, reckoned unity. The principal facts relating to chemical combinations require to be stated, in order to render the present subject intelligible.

In the first place, leaving out of view the combinations of liquids with each other, and the common cases of solution in water and alcohol, the first law relating to the combination of substances is, that the composition of bodies is fixed and invariable; or, in other words, a compound substance, so long as it retains its characteristic properties, always consists of the same elements, united together in the same proportion. Sulphuric acid, for example, is always composed of sulphur and oxygen, in the ratio of sixteen parts, by weight, of the former, to twenty-four of the latter; no other elements can form it, and it can form only one of its own elements form it in any other proportion. Sulphate of barytes, in like manner, is always composed of forty parts of sulphuric acid and seventy-eight of barytes. If sulphuric acid and barytes should enter into combination in any other proportion, some new compound, different from sulphate of barytes, would be formed.

The second law relating to this subject is, that when one body combines with another in different proportions, the larger proportion of one of the ingredients has a simple arithmetical ratio to the smaller proportion; the second quantity being a simple multiple of the first; and if there is a third or fourth proportion, the same ratio continues between them. The combinations of the two substances, which in their gaseous state, form, by their mixture, the atmosphere—oxygen and nitrogen,—unite in five different proportions, and form a good illustration of this law, these proportions having to each other the simple ratio of 1, 2, 3, 4, 5.

Nitrous oxide consists of 14 8
Nitric oxide 14 10
Hydrogen 16 8
Nitrous acid 11 32
Nitric acid 14 40

To give an example from the salts,—the bicarbonate of potash, contains twice as much carbonic acid as the carbonate; and the oxalic acid of the three oxalates of potash is in the ratio of 1, 2, and 4. This law is often called the law of multiples or of combination in multiple proportion. It has been established only by comparatively recent investigations, but the utmost rigour has been abundantly evinced that it is a well-founded law.

The third law of combination is no less remarkable than the preceding, and is intimately connected with it. Water and hypo-sulphurous acid may be added for its illustration. The former is composed of eight parts of oxygen and one of hydrogen; the latter of eight parts of oxygen to sixteen sulphur. Now, the well-known substance sulphuretted hydrogen, is constituted of one hydrogen to sixteen sulphur; that is, the quantities of hydrogen and of sulphur, which combine with the same quantity of oxygen, combine with one another. Again, forty parts of selenium, with eight of oxygen form the oxide of selenium, and with one of hydrogen, seleniuretted hydrogen; thirty-six parts of chlorine, with eight of oxygen, constitute the oxide of chlorine, and with one of hydrogen, form muriatic acid gas; sixteen parts of sulphur combine with thirty-six of chlorine to form the chloric acid of sulphur.

It is manifest, from these examples, that bodies unite according to proportional numbers; and hence has arisen the use of certain terms, as, proportion, combining proportions, or equivalent, to express them. Thus the combining proportions of the substances just alluded to are,—

Hypo-sulphurous acid is composed of
Sulphur, Oxygen.
Sulphuric acid, 10 or 1 pr. + 8
Sulphuric acid, 16 or 1 pr. + 24 or 3 pr.

The most usual combination is 1 proportion of one body either with 1 or with 2 proportions of another. Combinations of 1 to 3, or 1 to 4, are very uncommon, unless the more simple compounds likewise.

But the law does not apply to elementary substances only, since compound bodies have their combining proportions, which may likewise be expressed in numbers. Thus, since water is composed of one proportion, or 8, of oxygen, and one proportion, or 1, of hydrogen, its combining proportion is 9. The proportion of sulphuric acid, is 40, because it is a compound of one proportion, or 16 of sulphur, and three proportions, or 24, of oxygen; and, in like manner the combining proportion of muriatic acid is 37, because it is a compound of one proportion, or 36 of chlorine, and one proportion, or 1, of hydrogen.

The proportional number of potassium is 40, and, as that quantity combines with 8 of oxygen to form potash, the combining proportion of potash is 48.

Now, when these compounds unite, one proportion of the one combines with one, two, three, or more proportions of the other, precisely as the simple substances do. The hydrate of potash, for example, is constituted of 48 potash and 9 of water, and its combining proportion is, consequently, 48:5:9, or 57. The sulphate of potash is composed of 40 sulphuric acid + 48 potash. The combining proportion of this salt is, therefore, 38. The muriate of the same alkali is composed of 37 muriatic acid + 48 potash; its combining proportion is, therefore, 85. The
EQUIVALENTS.

Thomson's description of the salts affords an excellent illustration of this subject; and, to exemplify it still further, a list of the proportional numbers of a few acids and alkaline bases is subjoined.

Fluoric acid,  10  Lithia,  18
Phosphoric acid,  28  Magnesia,  20
Muratic acid,  37  Lime,  28
Sulphuric acid,  40  Soda,  32
Nitric acid,  64  Potash,  48
Arsenic acid,  62  Barytes,  78

Now, bodies uniting according to their proportional numbers, as has been seen above, the proportion of each base expresses the precise quantity required to neutralize a proportion of each of the acids. Thus eighteen of lithia, thirty-two of soda, and seventy-eight of barytes combine with ten of fluoric acid, forming the neutral fluates of lithia, soda, and barytes, and are termed equivalents of each other, as well as of fluoric acid. The same fact is obvious, with respect to the acids; for twenty-eight of phosphoric, forty of sulphuric, and eighty-four of arsenic acid unite with sixty-eight of lime, forming the neutral phosphate, sulphate, and arseniate of lime, and these acids, in like manner, are equivalents of each other and of lime. These circumstances afford a ready explanation of the fact, that when two neutral salts mutually decompose one another, the resulting compounds are equivalent. The method of determining the proportional numbers, as might be anticipated from what has gone before, is, to analyze a definite compound of two simple substances which possess an extensive range of affinity. No two bodies are better adapted for this purpose than oxygen and hydrogen, and that compound of these which contains the smallest quantity of oxygen. Water is such a substance; and it is therefore regarded as a compound of one proportion of oxygen to one proportion of hydrogen. But analysis proves that it is composed of eight parts of water to one of the latter, by which the relative weights of their proportions are determined, that of oxygen being eight times heavier than that of hydrogen. Some compounds are next examined which contain the smallest proportion of oxygen or hydrogen in combination with some other substance, the quantities of each being the smallest that can unite together. Carbonic oxide with respect to carbon, and sulphuric hydrogen with respect to sulphur, answer this description perfectly. The former consists of eight oxygen and six carbon; the latter of one hydrogen and sixteen sulphur. The proportional number of carbon is, consequently, six, and of sulphur, sixteen. The proportions of all other bodies may be determined in the same manner. Since the proportional numbers merely express the relative quantities of different substances which combine together, it is, in itself, immaterial what figures are employed to express them. The only essential point is, that the relation should be strictly observed. Thus we may make the combining proportion of hydrogen 10; but then oxygen must be 80, carbon 60, and sulphur 160. Doctor Thomson makes oxygen 1, so that hydrogen is eight times less than before, or 0.125, carbon 0.75, and sulphur 15. Doctor Wollaston fixes oxygen at 10, by which hydrogen is 1 25, carbon 7.6, and so on. According to Berzelius, oxygen is 100. The system of Wollaston becomes the same as doctor Thomson's by merely dividing by 10; that is, by placing the decimal point more to the left by one figure; and then, if we multiply by 8, it is converted into Mr Dalton's scale, in which the oxygen is the standard.

Tables of the combining quantities of all chemical agents have been drawn up and arranged to guide the chemist in experimental researches. The utility of these tables is very extensive. Through their aid, and by remembering the proportional numbers of a few elementary substances, the composition of a great number of compound bodies may be calculated with facility. By knowing that 6 is the combining proportion of carbon, and 8 of oxygen, it is easy to recollect the composition of carbonic oxide and carbonic acid,—the first being 6 carbon + 8 oxygen, and the second 6 carbon + 16 oxygen. 40 is the number of potassium, and potash, being its protoxide, is composed of 40 potassium + 8 oxygen. From these few data, we know at once the composition of the carbonate and bicarbonate of potash. The first is 22 carbonic acid + 48 potash; the second, 44 carbonic acid + 72 potash.

These tables are rendered still more useful, if accompanied by a logarithmic sliding scale, the application of which to this purpose was a happy invention of doctor Wollaston. As it is not possible to include, on a single scale, the names of all substances, those are selected which are the most frequent subjects of investigation. The great advantage of this method is, that it affords data, from the relative weights of the compound, to determine the approximate distances of their relative weights, and at such distances from each other, according to their weights, that the series of numbers, placed on a sliding scale, can at pleasure be moved, so that any number expressing the weight of a compound may be brought to correspond with the place of that compound in the adjacent column. The arrangement is then such that the weight of any ingredient in its composition, of any reagent to be employed, or precipitate that might be obtained in its analysis, will be found opposite the point at which its respective name is placed. Let us illustrate its use by a few examples.

1. The quantity of any substance, which is equivalent to a given quantity of any other inscribed on the scale, may be learned by inspection; the quantities taken being quite arbitrary, and such as are liable to suit the purpose at any time. Thus, by bringing 50 on the slider (in a scale where the weight of hydrogen is expressed by 1), opposite to magnesia, or to its equivalent, 20, it will be seen that 50 parts of that earth are equivalent to 70 lime, 120 potash, &c.

2. It ascertains the quantity of each base that is equivalent to a given quantity of any acid. Thus 50 on the slider being brought opposite to sulphuric acid, or to its equivalent, 40, it appears that 50 parts of this acid saturate 25 of magnesia, 35 lime, 60 potash, &c. In a similar manner, it is capable of indicating the quantities of different acids required to saturate each base; thus 50 parts of magnesia saturate 100 of sulphuric acid 135 nitric acid, &c.

3. It enables us to determine, by inspection, the proportions of the components in a given quantity of any substance of known composition. Thus, by bringing 100, on the slider, opposite to 72, the equivalent of dry sulphate of soda, we find 55.5 on the slider, opposite to the equivalent of sulphuric acid, and 44.5 opposite to the equivalent of soda; numbers which, together, make up 100 of the salt. It expresses not only the proximate, but the ultimate elements of compounds. Thus, keeping the slider in the same situation as above, we find 22.4 on the slider, opposite to 16, the equivalent of arsenic acid, and 33.1 opposite to 25, the equivalent of three proportions of oxygen; and 22.4 + 33.1 make up, together, 55.5 of sulphuric acid. By reference to the equivalents of sodium and oxygen, we find also that 44
ERA—ERATOSTHENES. 83

parts of soda are made up of 33 sodium and 11 oxygen.

4. The quantity of any substance required to decompose a given quantity of another, by simple chemical action, is its equivalent. Thus, if we wish to know the smallest quantity of sulphuric acid adequate to decompose 100 parts of chloride of sodium, by bringing 100, on the slider, opposite to chloride of sodium, or its equivalent 60, we find 66% on the slider, opposite to 40, the equivalent of sulphuric acid; and, opposite to 40, the equivalent of sulphuric acid of commerce, we find 81% of the latter. We must, therefore, employ 66% of the former, or 81% of the latter. Again, to know the quantity of dry sulphate of soda which would result if all the common salt were decomposed, we shall find 120, on the slider, opposite to the dry sulphate, or to its equivalent, 72, and 270 opposite to the crystallized sulphate, or to its representative number, 102.

5. The quantities of salts, each consisting of two ingredients, that are required for mutual decomposition, may be learned by similar process on the sliding scale. Supposing, for instance, that we have 83 parts of sulphate of potash, and wish to know the quantity of chloride of barium required for their decomposition; bring 83, on the slider, opposite to sulphate of potash, or to 88, its representative, and opposite to 106, the equivalent of chloride of barium; we find 100 on the slider, which is the number required. The results of this decomposition may also be learned by examining the instrument when in the same situation of the slider; for opposite to the equivalent of sulphate of barytes, 118, we find on the slider 111, and opposite to chloride of potassium we find 71.5, on the slider, the two last numbers indicating the resulting quantities of the new compounds. Again, from the weight of a precipitate, it is easy to deduce the quantities of salts which have afforded it. Thus, if we had obtained experiment 120 parts of dry sulphate of barytes, on bringing that number opposite to its equivalent, 18, we see at once that they may have resulted from 89% of sulphate of potash, and 108 of chloride of barium; and moreover, that 120 parts of barytic sulphate are composed of 40% sulphuric acid, and 79% barytes; the sulphuric acid consisting of 16% sulphur and 24% oxygen, and the barytes of 51.5 oxygen and 71.5% barytes.

Other cases in which, on the scale of chemical equivalents, are pointed out by doctor Wollaston in his memoir, explanatory of its principle and uses, in the Phil. Trans. for 1814; but the accurate and ready solution of so many important practical problems as have been noticed above are sufficient to show its importance to the chemist. Doctor Ure remarks of it, that it is "an instrument which has contributed more to facilitate the general study and practice of chemistry than any other invention of man."

ERA. See Epoch, and Era.

ERASMUS, Desiderius, a celebrated scholar, was born at Rotterdam, in 1467, being the illegitimate son of a Dutchman of Gouda, by name Gerard, and the daughter of a physician. He was a singing-boy in the cathedral of Utrecht till his ninth year, then entered the school at Deventer, where he displayed such a genius as to be expected that he would be the most learned man of his time. After the death of his parents, whom he lost in his fourteenth year, his guardians compelled him to enter a monastery; and at the age of seventeen, he assumed the monastic habit. The bishop of Cambrai delivered him from this constraint. In 1492, he travelled to Paris, to perfect himself in theology and polite literature. He there became the instructor of several rich Englishmen, from one of whom he received a pension for life. He accompanied them to England in 1497, where he was graciously received by the king. He returned soon after to Paris, and then travelled and ravelled far and wide by the scene of his knowledge. In Bologna, where he received the degree of doctor of theology, he was one day mistaken, on account of his white scapulary, for one of the physicians who attended those sick of the plague; and, not keeping out of the way of the people, as such reasons were requisite to do, he was stoned, and narrowly escaped with his life. This accident was the occasion of his asking a dispensation from the vows of his order, which the pope granted him. He visited Venice, Padua, and Rome; but, brilliant as were the offers here made him, he preferred the invitation of his friends in England, where the favour in which he stood with Henry VIII. promised him still greater advantages. When he visited the lord chancellor sir Thomas More without making himself known to him, the chancellor was so delighted with his conversation, that he exclaimed "You are either Erasmus or the devil. If you are the devil, you are a benefic; but, we are unwilling to fetter himself by the accursed kind. He was for a short time professor of Greek at Oxford. He afterwards travelled through Germany and the Netherlands, and went to Bale, where he had his works printed by Froben. He died in 1536. His tomb may be seen at Bale, in the Calvinistic cathedral. To profound and extensive learning, Erasmus joined a refined taste and a delicate wit. Naturally fond of tranquillity and independence, he preferred the pleasure of literary ease and retirement to the pomp of high life. His caution and worldly prudence offended many of the best men of his times. He did great and lasting service to the cause of reviving learning. Although he took no direct part in the reformation, and was reproached by Luther for lukewarmness, he attacked the disorders of monkyry and superstition, and everywhere promoted the cause of truth. He wished for a general ecclesiastical council, to be composed of the most learned and enlightened men, but did not live to see his wish accomplished. He therefore confined his efforts to serve the world by his writings, which will always be prized for their interesting matter and graceful style. He the best editor of the *Bible*, by Le Clerc, Leyden, 1703, 10 vol. His life has been written by Jortin. Martin's life of Erasmus is a valuable work. Besides his editions of various classics, and his other philological and theological writings, we will only mention his well known book in praise of folly (Encomium Moriae), and his colloquies. His letters are very valuable in reference to the history of that period.

ERATO (from Ερατο, I love); one of the muses, whose name signifies loving, or lovely. She has much in common with Terpsichore—the same attributes, the same dress, and frequently a lyre and plectrum. She presides over the songs of lovers, and touches, as Ovid, in his Art of Love, informs us, the hearts of the coldest maidens by her tender lays. See Muses.

ERATOSTHENES, a learned man in the times of the Ptolemies, born at Cyrene, in Africa, B. C. 275, was librarian at Alexandria, and improved the science of geography, which he had reformed, enlarged, and reduced to system. He gained his greatest renown by his investigations of the size of the earth. He rendered much service to the science of astronomy, and first observed the obliquity of the ecliptic. (See Ecliptic.) Of his writings, one only remains complete, *Catasterismi*,—which treats of the constellations (Schubach, with a commentary, 1792). Of his geographical works, which were long
in high repute, the scattered remains were collected and published by Seidel, 1798.

ERCILLA Y ZUNIGA, DON ALONZO DE; knight of St. James, and chamberlain to the emperor Rodolphe the third son of a Spanish jurist, who was also a knight of the above order. When he was born is uncertain, but it was before 1540. His mother, from whom he inherited the name of Zuniga, carried him, after the early death of his father, to the court of the empress Isabella, consort of Charles V. The young Alonzo was page to the Infanta Don Philip, and accompanied him on his travels through the Netherlands and a part of Germany, and through Italy, Poland, Bohemia, and Hungary, and, in 1554, went with him to England, on the occasion of his marriage with Queen Mary. Soon after this an insurrection breaking out among the Araucanians, a tribe of Indians on the coast of Chili, Ercilla joined an expedition sent against them. The difficulties the Spaniards had to encounter, the heroic resistance of the natives, and the multitude of gallant deeds by which the war was signalized, inspired the young and brave Ercilla with the idea of making it the subject of an epic. He attempted it, and completed the name of La Araucana. He began the work on the spot, writing often during the night what had been achieved in the day (Tomando ora la espada, ora la pluma), and was obliged sometimes, for want of paper, to use pieces of leather. Ercilla is said afterwards to have come near losing his life by reason of a groundless charge of mutiny, and to have been actually on the scaffold before his innocence was made known. He returned to Spain, very much out of health, and after having finished the first part of his epic. All this he performed before completing his 28th year. In 1570, he married Maria Basn, at Madrid, whose charms and virtues are celebrated by him, in various passages of his poem. In 1577, the first part of his poem, in 1500, the whole, was published. His merits were not rewarded; for he died at Madrid in great poverty and obscurity. The time and circumstances of his death are uncertain; he must have been alive, however, in 1596, as Mosquera, in his book on military discipline, speaks of him as his contemporary. He left no legitimate children.

The Araucana is an historical epic in the octave measure, in which the author confines himself, with the exception of some episodes and a few fictions, to the narrative of the war with the Araucanians. In the poem often assumes almost the character of a chronicle. Voltaire's judgment on this poem (in his Essai sur la Poésie Épique) shows that he had not read it. Cervantes, in the sixth book of Don Quixote, ranks it by the side of the best Italian epics; but probably few persons, influenced by patriotic pride, will agree with him. It has been continued by a certain Don Diego de Santisteban Osorio. Lope de Vega has taken from the epic of Ercilla the materials for his piece Arauca Conquered. The first part of the Araucana, as already stated, appeared in 1577, in 16 cantos; the second part in 1578: the whole, in three parts, 1560, contains 37 cantos; a new edition, Madrid, 1776. It has been translated into Italian, and twice into French (but abridged), Paris, 1824: See Araucanians.

EREBUS; in fabulous history, the son of Chaos and Darkness. He married his sister, Night, and was the father of the most effective of the Fates, or Perse, or Fate, by some are called his daughters. He was transformed into a river, and plunged into Tartarus, because he aided the Titans. From him, the name Erebos was given to the infernal regions, particularly that part of it which is designated as the abode of virtuous shades, and from which they pass over immediately to the Elysian fields.

ERECTHEUS. See Erechtheion.

EREMITE (from the Greek ἔρημος, a desert;) one who secludes himself from society. See Ana libertatis.

ERESIKTION. See Erisikhion.

ERFURT; an important Prussian fortress in Thuringia. It was ceded to Prussia at the peace of Paris, since which time its fortifications have been much strengthened. It is situated on the great road which leads from Frankfort on the Maine to the north of Germany, passing in part of its course, along the mountains, called the Thüringer Wald. In the fifteenth and sixteenth century, Erfurt was a flourishing commercial place, and contained not less than 60,000 inhabitants; at present, there are not more than 21,530, in 2781 houses. The university, established in 1578, was suppressed by the Prussian government in 1816, for the purpose of merging it in one of those great establishments for education, of which Prussia has so many. The inhabitants are mostly Lutherans. There are two forts, called Peterburg and Cyriaksberg. Erfurt is the capital of a government, and the seat of several public institutions. Among these, the most remarkable is the gymnasium (royal schools), an institution for the deaf and dumb, a musical society, and several other institutions. The large bell called Susanna, made of the finest bell-metal, and weighing 275 cwt., and the cell in which Luther lived, while an Augustinian monk, from 1505 till 1514, are shown as curiosities. According to tradition, Erfurt was founded as early as the fifth century, by a certain Erpes. It was not a free imperial city, but always maintained a sort of independence, notwithstanding the claims of the elector of Ments. In 1483, it concluded a treaty with Saxony, by which it agreed to pay an annual sum for protection. In the seventeenth century, the elector of Ments finally obtained possession of it. In 1814, it was granted to Prussia, by the congress of Vienna. The government, of which it is the capital, contains 1404 square miles, with 257,600 inhabitants, in 22 large towns, 12 small towns, and 401 villages.

Erfurt is celebrated for the interview between Napoleon, and Alexander (emperor of Russia), several kings, and many princes, in September, 1808, when the French emperor's power was at its acme. The chief object of Napoleon was the entire pacification of Europe; he believed that he had finally succeeded in effecting that of the continent. (See the article Congress.) He and Alexander jointly invited the king of England to accede to the peace; but their pressing letter was answered only by the minister, who, as Napoleon expressed himself, attempted to renew the questions which had been decided at Jena and Friedland. "He wished me," says he, "to confess that I had been guilty of violence at Bayonne, by acknowledging the cortes of Spain and the regency of Portugal." We add here, that a remarkable document, the letter of Napoleon and Alexander to the king of England, which is only a repetition of the sentiments expressed by Napoleon, in his letter to George III., after his adoption of the title of emperor — "Sure, the present situation of Europe has brought us together at Erfurt. Our first wish is to fulfil the desire of all nations, and, by a speedy pacification with your majesty, to take the first steps for the greater glory of our fatherland and of Europe. The long and bloody war, which has consumed the continent, is at an end, and cannot be renewed. Many changes have taken place in Europe; many governments have been destroyed. The cause is to be found in the unmeasurableness and the sufferings occasioned by the stagnation of maritime commerce. Greater changes still may take place, and all will be
unfavourable to the politics of England. Peace, therefore, is, at the same time, the common cause of the nations of the continent and of Great Britain. We unite in requesting your majesty to lend an ear to the views of science, which are destined to the public welfare; to reconcile contending interests, and secure the welfare of Europe, and of the generation over which Providence has placed us." This letter was answered by Campan, with an open note to Napoleon's minister of foreign affairs. In the answer which Napoleon sent to the correspondent of France that Austria, which contained the liveliest assurances of his good disposition, the French emperor entertains him, in the most decisive language, to adopt a frank, open, and sincere policy.

ERGOT is an elongated, cylindrical excrescence, a little curved, and somewhat resembling a horn, which sometimes takes the place of the grain in several cultivated grasses, particularly in rye, which, when in this state, is commonly called spurred rye. It has been considered by some authors as a disease, by others as a fungus, and has been referred by the loss of the grain to this natural, when attacked, becomes at first soft and pulpy, afterwards hardens, and elongates gradually; when young, it is red or violaceous, afterwards lead coloured, and finally black, with a white interior; generally two or three grains in a spike only are affected; wet weather is favourable to its development. When bread containing this substance has been eaten, it has produced very formidable consequences—sometimes gangrene of the extremities and death. Ergot is an important article in materia medica; has been found capable of exerting a very powerful and specific action upon the uterus, and is administered in small doses in extreme cases. This remedy has been principally used in America. Of late, it has been successfully employed in France.

ERHARD, Christian Daniel, professor of criminal law at Leipsic, was born 1759, at Dresden, and studied law from 1778 to 1781, at Leipsic, where he devoted himself to history, philosophy, and the arts. In 1801, the emperor Alexander I. appointed him correspondent of the legislative commission at Petersburg, with a pension: many academies, likewise, appointed him an honorary member. He obtained important places as an instructor in his science, and also as a jurist, Dr. Friderici. His works are on important subjects of philosophical and positive law, and contain many original views. His fame was widely extended by his work on the legislation of Leopard II. in Tuscany. In his remarks on the works of Algarmon Sidney, on forms of government, in several treatises published by him in his Amathes, a periodical of 1788 and 1789,—in the preface to his translation of the commercial code, and the civil code of France, and in his essays De Arbitrio Judicis, and De Notione Furti, he has discussed some of the most important subjects of legislation. His translation of the Code Napoleon (24 edition, 1811), is universally acknowledged to be the best. His last, and, perhaps, his greatest labour, was the sketch of a criminal code for Saxony. As far as it was finished, it has been published by one of his scholars—doctor Friderici. He died in 1813. He united variety of learning, acuteness, wit, and agreeable manners, to this happy union.

ERHARD, John Benjamin, doctor of medicine at Berlin, was born 1736, at Nuremberg. His father, a poor wire-drawer, who had a good deal of musical and literary taste, endeavoured to cultivate the same tastes in his only child. The boy left school at the age of eleven years, and was desirous of learning his father's trade, and becoming acquainted with engraving. He received instruction in drawing, and afterwards in engraving, in French and Italian, and also took lessons on the harpsichord. Being destitute of books, he endeavoured to procure philosophical works from the dealers in old books; but he could not obtain many of the most desirable by the sale of Wolf. A love for Latin and Greek was awakened in him; philosophy led him to mathematics; and here, too, the writings of Wolf were his guides. Thus Erhard was engaged till his thirteenth year, when an epileptic attack obliged him to renounce, for a while, all serious attention to his studies. But he resumed his studies in philosophy and the mathematics in his 16th year. At twenty, he formed an acquaintance with a celebrated surgeon, Siebold, who was astonished at such proficiency in a young mechanic, and endeavoured to engage him in the study of medicine at Wurzburg. Erhard, however, in consequence of his republican principles, continued still to live as a mechanic. He had chosen his guides in morals when a boy of fourteen, and, in the main, was always faithful to them. He says in a manuscript essay, "One of these guides was a slave and the other, a slave;" but he continued, "I desire nothing but what fate forced upon me; while they both taught me to seek for happiness not in external circumstances, but in my own heart." After the death of his mother, in 1787, Erhard resolved to go to Wurzburg to study medicine. He remained there two years, and, in 1792, obtained a doctor's degree at Altorf. He had no inclination to the practice of physic, on account of the situation of affairs at that time. The French revolution filled him with fears for the fate of Germany. He was in doubt what part to act, hating the aristocratic party for what they intended to do, and the democratic party for what they had actually done; he determined, therefore, to visit North America. But having lost all his property in 1793, by the treachery of an agent, he became much embarrassed, and, in 1797, accepted a place in Anspach under the minister Von Hardenberg. Two years after, he went to Berlin, where he received permission to practise physic, to which he afterwards entirely devoted himself. He died in 1827. Among his works, are his treatise on the medical science, and his Theory of Laws, which relate to the health of citizens, and the use of medical science in all its branches. He was Professor of Medicine at Tubingen, in 1800. His treatise On the Right of the People to a Revolution (Jena, 1798) expresses the views to which he was led by reflection on the great events of that period.

ERIC. Fourteen kings of this name have reigned in Sweden, the last of whom ascended the throne in 1560. He exhibited much energy of character, but drove his brothers to rebellion by his violence and severity. His tyranny, and a disgraceful marriage, alienated the minds of his subjects; and his brothers, John and Charles, formed a party against him, which deprived him of the crown, in 1568, with the consent of the estates. He died (1577) in prison by poison. He was active and industrious. A patron of the arts, he esteemed and patronised artists and mechanics, received the Huguenots with open arms, abolished many superstitious usages in religion, and rendered commerce and navigation flourishing. His judicial institutions were particularly improved. He created a high nobility in Sweden, by conferring the dignity of count and baron. See Celsius's History of Eric XIV., in Swedish, Greifswalde, 1776.

ERITCHIONIUS, or ERETHUS, in fabulous history, the son of Dardanus and Batea, and grandson of Jupiter, was king of Thessaly. He was the richest man in his kingdom, having in his meadows three thousand mares with foals. Boreas fell in love
with one of these mares, and transformed himself into a horse. The product of this union was twelve colts, which bounded over the plains without injuring a spire of grass, and skimmed the waves of the sea. Erichthonius obtained the kingdom of Troy by the death of his brother Ilus without children. He married Astyoche, the daughter of Simos, by whom (or, according to some, by Callirrhoë, the daughter of Scamander) he became the father of Tros.

Another Erichthonius, king of Athens, was, as fable relates, the son of Vulcan and Atthis, daughter of Cramus. Erichthonius was educated in the temple of Minerva, by the goddess herself. When he grew up, he drove Amphithryon from his throne, and reigned in his stead. He erected a statute to Minerva; or, according to some, a temple in the citadel, and instituted, in her honour, the festival called Panathenaeon. The fabulous history of this Erichthonius is differently related. He is said to have had dragon's feet; and, on account of his inability to walk, to have invented a four-wheeled covered wagon to conceal his feet in it. For this reason, Jupiter placed him among the stars, where he became a constellation, under the name of Boötes. ERIDANUS (probably the Po, in Italy); a river famous in mythology, mentioned in the return of the Argonauts. When Phaeon, who is also called Eridanus, was struck by the thunderbolts of Jupiter, he fell into this river—and his three sisters, the Heliades, lamented him till they were changed into poplars. They did not cease to weep even in this condition; and their tears falling into the water of the river, became transparent amber. It is believed by many, that the amber found on the shores of the Baltic passed, by barter, through several savage tribes, until it reached the Adriatic sea, where, according to the ancients, it was collected and sent to Alexandria. The story of his wife, which was that she perished of grief, and that her tears caused amber to spring up, has become a favourite subject for the poets. Some, indeed, deny the possibility of the story, alleging that the tears of the monks, rather than the subordination of his pupils, was the real cause of his death, insomuch as his heterodoxy had given great offence to their fraternity. This statement of facts has, however, been, with considerable probability, disputed by other writers, who are of opinion, that the English historians have confounded John Scotus Eriugena with another, John Scotus, abbot of Ethelingay, who taught at Oxford. In proof of the latter supposition, Mackenzie, in his first volume of Scottish writers, quotes a letter from Anastasius Bibliothecarius to Charles the Bold, written in 875, which speaks of Eriugena as being dead. This letter is an authentic historical document, and thinks it probable that he died in France. A treatise written by him with great acuteness and metaphysical subtilty, De Divinione Naturae, was published at Oxford, in folio, by doctor Gale, in 1651. A work of his, against transubstantiation, entitled De Corpore et Sanguine Domini, is also extant, printed in 1598. He is said to have been as celebrated for his wit as for his learning.

ERINNYES. See Furies.

ERIPHYLE, in fabulous history, daughter of Talus, and wife of Amphirhauros, whom she betrayed for a necklace presented to her by Polynices, so that he was compelled to go to war against the Seven princes against Theseus, whose he knew he was to perish. Her son, Alceon, slew her for her treachery; but Æsculapius restored her to life. The necklace was made by Vulcan, and had the power of rendering any person who wore it, invisible.

ERIS, in heathen mythology, the goddess of discord, daughter of Night, and sister of Nemesis and the Parcae or Fates; not being invited to the marriage of Peleus, she revenged herself by throwing a golden apple into the room where the gods and goddesses were assembled, with this inscription: For the most beautiful. Juno, Minerva, and Venus
contended for it; hence it was called the apple of discord. Jupiter appointed the son of Priam, Paris, then a shepherd on mount Ida, judge. He awarded the apple to Venus, and was rewarded by her with the beautiful Helen, on whose account the Trojan war was made. 

ERISICTHON, or ERISICTHON, in fabulous history, the son of Triopas, king of Thessaly. He attempted to cut down a grove sacred to Ceres. Beginning with a large and beautiful oak, the abode of one of the dryads, under the shade of which the rest of the dryads commonly celebrated their days, the grandson of Pantheon. When Erisicthon fell under the Prussian sceptre, the university began to flourish; but, this part of the country being taken from Prussia in 1806, the university remained in a languishing condition until the district was annexed to Bavaria. (See

ERLANGEN; a city in the kingdom of Bavaria, circle of the Regnit, on the Regnitz, containing 813 houses, with 11,580 inhabitants; lat. 49° 35' 36" N.; lon. 11° 14' E. The city is distinguished for its university, founded in 1743, by Frederic, margrave of Bayreuth. When Erlangen fell under the Prussian sceptre, the university began to flourish; but, this part of the country being taken from Prussia in 1806, the university remained in a languishing condition until the district was annexed to Bavaria. (See

ERMARK; a Turkish word, signifying river, and contained in many geographical names, as Kizik-Ermark (Red-river); Jekil-Ermark, (Green-river.)

EREMONVILLE; a village in the department of the Oise, about eight leagues from Paris; the country seat of M. de Girardin, celebrated for its large and handsome park, in which the remains of Rousseau were entombed upon an island of poplars. French and foreigners, particularly the British, frequently go thither from Paris, during the summer, to visit the tomb of Rousseau. In former days, the fair Gabriele d'Estrees resided at Eremonneville, in a hunting castle, of which a tower, still standing, bears the name of that favourite of Henry IV. After her death, Eremonneville fell into the hands of that faithful friend of Henry, whom grief for the loss of his master carried off two days after the king's assassination by Ravailiac. Eremonneville has been made still more remarkable in later times. J. J. Rousseau died here, after having lived at the place only six weeks. His bones were removed from the island of poplars to the Pantheon. The ornaments of art contribute to the embellishment of this beautiful spot, so highly favoured by nature. The elder de Girardin, author of a work on horticulture, expended 3,000,000 francs on it in thirty years.

ERMINE (mustela erminea, Lin.) This beautiful little animal belongs to the tribe digitigrada, or quadrupeds characterized by moving on the extremities of their toes, and endowed with a greater degree of agility than that possessed by the plantigrada, or those walking on the whole sole of the foot. The ermine, according to the observers of Musignano, is the common wensel of the United States in its winter hair. It is found in the northern parts of America and Asia, in great abundance; though it is not confined to these regions, since it occurs even in the middle States of America, and also in the temperate zones of Europe. In the eastern States of America, it is known as the weasel further north, and in England, it is called stout in its summer, and ermine in its winter hair. In France, in summer, it is termed rosetet, and in winter hermine; in this state, it is the mus Ponticus of Pliny. The habits of the ermine are very similar to those of the common wensel of Europe, frequenting barns and out-houses, generally making its retreats beneath the floor and rafters. It feeds on mice and rats, and soon clears its haunts of these pernicious depredators; but it does not run the risk of this of the hawk. It is very destructive to poultry, birds, and young rabbits; it is also a great devourer of eggs. In the neighbourhood of Hudson's bay, ermine are very abundant, particularly in the barren grounds and open plains. When in pursuit of their prey, they carry their young backwardly, and reach them, and died in a dreadful state of despair.

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ERNESTI.—ERSCH.

Ernst, the learned Orientalist, was born at Gorkem in Holland, in 1584, and studied at Leyden, where he at first despaired of success. His confidence, however, was soon revived, and he returned to his studies with so much zeal, that his progress justly astonished his instructors, and was greatly admired by himself. Of his accuracy as a critic and grammarian, his editions of Xenophon's Memorabilia of Socrates, the Cloud of Aristophanes, Homer's works, Callimachus, Polybios, Suetonius, Tacitus, and, above all, his admirable edition of Cicero's works (first, at Leyden, 1730), are sufficiently proofs. For the elegance of his Latin style, he well deserves to be called the Cicero of Germany. His Opera sacra (Leyden, 1762), oration. (Leipsic, 1791), Initia Doctrin. Solidarioris (Leipsic, 1736), have been often published. His theological writings are no less numerous.

ERNESTI, AUGUSTUS WILLIAM, nephew of the preceding, was born in 1733, and died 1801. He was professor of philosophy and eloquence, and a distinguished philologist. We are indebted to him, among other works, for a good edition of Livy and Ammianus Marcellinus.

Eros; the Greek name of Cupid and Amor (properly Eros); Erostratus. See Erostratux.Erotic (from the Greek eros, love; relating to love.—Erotic Poetry; amatory poetry.—The name of erotic writers has been applied, in Greek literature, particularly to a class of romance writers, and to the writer of the Milesian Tales. These writers belong to the later periods of Greek literature, and abound in sophistical subtleties and ornaments. The best of them are Achilles Tatius, Heliodorus, Longus, Xenophon of Ephesus, and Chariton. There is a collection of them—Scriptores erotic: Graeci, Curia Mit- cadii (Lyon, 1607). —Erotonomy (from eros, love, and μασίς, madness). This term has been employed, by some writers, to denote that modification of insanity, in which the passion of love is the origin, and in which the love of a particular individual constitutes the predo-

minant idea, occupying the whole attention of the patient. Lenticular thoughts and physical excitement do not exist in this disease. Those who are afflicted with erotomania, fix their affections on a certain object, often one which they have had but a single opportunity to see; sometimes also one which cannot return their love. The eye is lively and ani-
mated; the loins; but there is no certain indication of the subject always within the limits of propriety. They forget themselves, and yield a pure, often a secret worship to their idol, whose wishes and caprices they implicitly obey. Sometimes erotomania begins under the form of melancholy, instead of raving; the patient is pensive and silent; it then terminates in a sort of nervous fever. The discovery of it is some-
times difficult; the passion betrays itself, however, at the sight, or even the name, of the loved object; the countenance grows animated; the pulse quick, strong, and spasmodic. Hippocrates, by these symp-
toms, discovered the love of Pericleas to his father's mistress; and Erostratus, the affection of Antiochus for his step-mother, Stratonice. Erotonomy sometimes passes into perfect delirium, leads to suicide, hysterics, &c. It depends on the same causes as other mental diseases. Young people are peculiarly susceptible. In France, the nervous system and lively imagination, who give themselves up to excess in pleasure, or are spoiled by reading ro-
mances, and rendered effeminate by an injudicious education and 'indoleness. Low and light diet has been recommended in this disease, together with active exertion of body and mind.

ERPENIIUS, THOMAS (properly VON Erpen), a
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journals and other periodicals. They are executed with accuracy, on a good plan, and with a general account of reviews, whose character for partiality or impartiality is illustrated by examples. At the same time they are admitted by University and Dictionary of Modern Authors, which he afterwards limited to European writers. This was the origin of his Gelehrtes Frankreich (Literary France.) Hamburg, 1797—1806, 3 vols., with two supplements. In the year 1803, he was made professor of geography at the university of Halle, where he published his Manual of German Literature, from the Middle of the eighteenth century till the latest times (Amsterdam and Leipzig, 1812, 2 vols. 8vo, 2d edition, Leipzig, 1822), and the Universal Encyclopaedia of Arts and Sciences (Leipzig, 1818, et seq. 4to). By the former work, he first gave a systematic character to modern German bibliography; and its completeness, accuracy, and arrangement make it a model for such a work. What knowledge, what attention and industry, are requisite to conduct a work like the Encyclopaedia, as he has done it, needs no explanation. He died in January, 1828.

ERSKINE, EBENEZER, the founder of the Secession church in Scotland, was born on the 22d of June, 1680, and died in 1756. After going through a regular course of study at the university of Edinburgh, he was made a country-sent minister. In 1705, he was in the German church; in which situation he continued for twenty-six years, when he removed to Stirling. Five volumes of his sermons were printed in 1762 and 1769, 8vo. Regarding his participation in the origin of the Secession church, the reader is referred to the article Secession.—His brother RALPH, the author of the Gospel Sonnets, was born in 1685, and died in 1752. He was minister of Dunfermline, in Fife-shire, from 1711 to 1734, when he was ejected for secession. His sermons are numerous, and together with his lyrical effusions, called Gospel Sonnets, were printed in 1750, in 2 vols. 8vo. These latter have been given a reprint.

ERSKINE, The Hon. Henry, a distinguished Scottish barrister, was the third son of Henry David, tenth earl of Buchan, by Agnes, daughter of Sir James Stewart of Cowlten and Goodness, Baronet, and was born at Edinburgh, on the 1st of November, 1710. He became a lawyer, and, after having risen to the dignity of lord high chancellor of Great Britain, and himself being long the brightest ornament of the Scottish bar.

Mr Erskine, after studying at the universities of St. Andrews, Edinburgh, and Glasgow, adopted the legal profession, and in 1740 was called to the bar. There he was equalled, perhaps surpassed in depth of legal knowledge, by one or two of his fellows; but none could boast of equal variety and extent of accomplishments; none surpassed him in knowledge of human character; and none equalled him in quickness of perception, playfulness of fancy and professional tact. He was the Horace of the profession; and his "seria commixta jocos" are still remembered with pleasure by his surviving contemporaries. Yet, while by the unanimous suffrages of the public, Mr Erskine found himself placed without a rival at the head of a commanding profession, his general deportment was characterized by the most unaffected modesty and easy affability, and his talents were not less at the service of indigent but deserving clients, than they were to be commanded by those whose wealth or influence enabled them most liberally to remunerate his exertions. Indeed his talents were never more conspicuous than when they were employed in protecting innocence from oppression, in vindicating the cause of the oppressed, or exposing the injustice of the oppressor. He had early embraced the principles of whiggism; and on the accession of the Rockingham administration, his merits pointed him out as the fittest member of faculty, for the important office of lord advocate of Scotland, to which he was immediately appointed. But his opportunities to supply and complete University and Dictionary of Modern Authors, his account of its ephemeral existence; and on his retirement, he was immediately stripped of his official dignity, and even some years afterwards deprived, by the vote of his brethren, on account of his infamous political sentiments, of the honourable office of dean of the faculty. On the expiration of the temporal party in the office in 1806, he once more became lord advocate, and was returned member for the Dumfries district of burghs, in the room of major general Dalrymple. This, however, like the former whig administration, was not suffered to continue long in power, and with its dissolution, Mr Erskine again lost his office and seat in parliament. Amid these disappointments, Mr Erskine remained not less distinguished by inflexible steadiness to his principles, than by invariable gentleness and urbanity in his manner of asserting them.

Mr Erskine's constitution began to give way under the pressure of disease, about the year 1812; and he, thereupon, retired from professional life, to his beautiful villa of Ammondell in West Lochian. The five remaining years of his life were consumed by a complication of maladies; and he expired at his residence, Fife-shire, in March, 1817. He had completed the 71st year of his age. It has been said of men of wit in general, that they delight and fascinate everywhere but at home; this observation, however, though too generally true, could not be applied to him, for no man delighted more in the enjoyment of home, or felt more truly happy in the bosom of his family, while at the same time none were more capable of entering into the gayeties of polished society, or more courted for the brilliancy of his wit, and the ease and polish of his manners.

ERSKINE, THOMAS, Lord Erskine, the younger brother of the preceding, became still more distinguished as a lawyer and pleader. He was born in the year 1750, and was educated partly at the high school of Edinburgh, and partly at the university of St. Andrews. The contracted means of his family rendering a profession necessary, he was placed as a commoner in the regiment of the 71st year of his age. He never obtained a commission in the navy, which he quitted after a service of four years, and entered into the royalties, or first regiment of foot, in 1768. In 1778, he married, and went, with his regiment, to Minorca, where he spent the years 1778, 1779, and 1780. He served in the army six years, and, during that time, acquired considerable reputation for the acuteness and versatility of his talents in conversation; and it is supposed that this circumstance, and the earnest persuasion of his mother—a lady of uncommon acquirments and penetration,—induced him, at the age of twenty-six, to embrace, the legal profession. He entered as a fellow commoner at Trinity college, Cambridge, in 1777, merely to obtain a degree, to which he was entitled as the son of a nobleman, and thereby to shorten his passage to the bar; and he, at the same time, entered himself a student of Lincoln's Inn. He also became a pupil in the office of Mr. afterwards judge Buller, then an eminent special pleader, and subsequently in that of Mr. afterwards baron Wood. He was called to the bar in 1779, and his success was immediate. Accidentally introduced to captain Baillie, who had been removed, by the earl of Sandwich, from the superintendence of Greenwich hospital, he was employed by that gentleman to oppose a motion of the attorney-general, for leave to file an indictment against him for a libel on the earl. He showed so
much eloquence and spirit on this occasion, that, on leaving the court, he received thirty retainers from attorneys who happened to be present. This occurrence took place in the Michaelmas following the Trinity term in which he had been admitted; and, in a few months afterwards, he was equally favoured by being chosen to the same. He was engaged in the Commons, as counsel for Mr Carnan, the bookseller, against a bill introduced by lord North, then prime minister, to restore to the universities the monopoly in almanacks, which Mr Carnan had succeeded in abolishing by legal judgment. His speech in opposition to this bill, his manner in debate, his language, and, the bill being lost by a considerable majority, his reputation became so established, that he was hailed forward engaged either for plaintiff or defendant in the most important causes during a practice of twenty-five years.

In May, 1788, he received a silk gown, and, the same year, was elected member of parliament for Portsmouth. The latter he acquired from the reputation he obtained there when acting as counsel on the celebrated trial of admiral Keppel; and he was unanimously rechosen for the same borough on every succeeding election, until raised to the peerage. To the rights of this seat, he was only maintained on all occasions, but particularly in the celebrated trial of the dean of St Asaph for libel, when justice Buller refused to receive the verdict of "guilty of publishing only," as returned by the jury. In 1789, he found another fortunate opportunity for the display of his peculiar eloquence, in a defence of Mr Stockdale, the bookseller, for publishing what was charged as a libellous pamphlet in favour of Mr Hastings, whose situation at the time (being then about to take his trial) gave him admirable scope for the animated appeal to feeling, by which his oratory was so feloniously distinguished. In 1792, being employed to defend Thomas Paine, when prosecuted for the second part of his Rights of Man, he declared that, waiving all personal convictions, he deemed it right, as an English advocate, to obey the call: by the maintenance of which principle, he lost his office of attorney-general to the prince of Wales. The measure was displeasing to the prince, who arose out of the part cast upon him, in conjunction with Mr, afterwards sir Vicey Gibbs, in the trials of Hardy, Took, and others, for high treason, in 1794. These trials lasted for several weeks; and the ability displayed by Mr Erskine on this eventful occasion was externally approved by all political parties. He was a warm partisan of Mr Fox, and a strenuous opposer of the war with France; on which subject he imbodied his sentiments in a pamphlet, entitled A View of the Causes and Consequences of the War with France; when such was the attraction of his name, that it ran through the unprecedented number of forty-eight editions. In 1802, the prince of Wales not only restored him to his office of attorney-general, but made him keeper of his seals for the duchy of Cornwall. On the death of Mr Pitt, in 1806, when lord Grenville received the commands of George III. to form a new administration, Mr Erskine was created a peer by the title of lord Erskine, of Restormel castle, in Cornwall, and raised to the dignity of lord high chancellor of Great Britain; but was soon removed by the dissolution of the brief administration of which he formed a part.

Owing to a decay in fortune, originating in an unwarranted increased privilege, and a great fall of income from the loss of professional employment, the latter years of his life were, notwithstanding the extreme buoyancy of his spirits, exceedingly imbibed. Nor were these difficulties abated by the circumstance of an unhappy second marriage, and some eccentricity of conduct, exceedingly incomparable with his age and station. In his leisure, he amused himself by editing several of the state trials. The preface to Mr Fox's Speeches was also written by him, as well as a political romance, in two volumes, entitled Armata, and some pamphlets in support of the late prince of Wales. He died in 1823, of an inflammation of the chest.

The talents of lord Erskine were peculiarly those of the accomplished advocate, in which character he exhibited a power of commanding, at the instant, all the resources of his mind, and a dexterity of applying them, which shew was admirably administered to. This faculty, united with great spirit and courage, rendered him peculiarly able on the defensive side of political persecution; and some leading, but disputed constitutional doctrines have been firmly established by his exertions. As a senatorial orator, his claims were but secondary; nor as a political writer is he entitled to much distinction. Many of Erskine's speeches at the bar have been published under the following titles: Speeches of the Hon. Thomas Erskine, now lord Erskine, when at the Bar, on Subjects connected with the Liberty of the Press and against Constructive Treasons, in 4 vols. 2d edition, London; 1792, no one side the English bar ever exceeded. This, at the Bar, on Miscellaneous Subjects, 1810, by Ridgway. Eruption, in medicine; a sudden and copious excretion of humours, and the same with exanthema, or breaking out; as the pustules of the plague, small-pox, measles, &c.

ERWIN OF STEINBACH; a celebrated architect in the 13th century. See Strasburg, Minster of.

ERYNGO (eryngium); a genus of plants belonging to the natural order umbelliferae. The species are herbaceous, and have something of the aspect of the thistle; the leaves are alternate, simple, or divided, and are furnished with spines on their margins; the flowers are sessile, often of a bluish colour, capitulate, and surrounded by a common receptacle. The E. campestre was formerly much employed in Europe as a tonic, and as proper to excite appetite; but its virtues are feeble, and it has now gone out of use, except as a parapharmaceutical ingredient.

ERYSIPelas (from Ερυσιπέλας, I draw, and ἔρις, adjoicing; named from the neighbouring parts being affected by the eruption); the rose or St Anthony's fire. This disease is an inflammatory affection, principally of the skin, when it makes its appearance externally. It is caused by heat, and is seated internally; and is more liable to attack women and children, and those of an irritable habit, than those of a pensive and robust constitution. Erysipelas sometimes returns periodically, attacking the patient once or twice a-year, or even once every month; and then, by its repeated attacks, it often gradually exhausts the strength, especially if the patient be old and of a bad habit. Every part of the body is equally liable to it; but it more frequently appears on the face, legs, and feet, than anywhere else, when seated externally. It is brought on by all the causes that are apt to excite inflammation, such as too frequent and too great application of stimulants, exposure to cold, and obstructed perspirations; and it may likewise be occasioned by a certain matter generated within the body, and thrown out on its surface. A particular state of the atmosphere seems sometimes to render it epidemic. A species of erysipelas, a great fall of the skin, usually attacks the trunk of the body, that is vulgarly known by the name of shingles, being a corruption of the French word eingle, which implies a belt. Instead of appearing a uniform infected surface, it consists of a number of little pimples extend-
ing round the body a little above the umbilicus, which have vesicles formed on them in a short time. Little or no danger ever attends this species of erysipelas.

ERZERUM, or ARZERUM, or ARZ-ROUM (anciently *Ardz*); a city and the capital of Turkish Armenia, or Transcaucasia, and also of a pachalic to which it gives name; is situated in the N. N. E. of Aleppo, 510 E. by S. of Constantinople; lat. 40° 57' E.; lat. 39° 58' N.; population, according to Hassel, Cannabich, Malte-Brun, &c., only 25,000; according to the Edinburgh Gazetteer, 100,000, or 130,000. Es Esclaire, or the ancient city in 1508, gives the following estimate—Turkish families, 50,000; Armenians, 4 or 5000; Greeks, 100; Persians living in a caravansary, about 1000. Mr Morier mentions, that from the original estimate he deducted more than one-third of the number of Turkish families; but the reduced statement, at the rate of five persons to a family, makes the Turkish population amount to 250,000. It is an Armenian archbishop's and Greek bishop's see.

Erzerum is situated near the head of the Euphrates, on a rising ground, at the base of a chain of mountains, which are surrounded with sauce. The climate is healthy, but the cold in winter intense. It is surrounded by a double stone wall, with four gates. It is well built; the houses generally of stone, with rafters of wood, and terraced, having grass growing on the tops, and sheep and calves feeding there; so that when seen from a distance, the roofs of the houses can hardly be distinguished from the plain at their foundation. The streets are mostly paved, the hazars are spacious and well stocked, and the place exhibits an appearance of much industry. It contains about 100 mosques, one Greek, and two Armenian churches, and sixteen baths. It has considerable manufactures, and an extensive trade in copper, and articles from Persia, and countries north-west of Hindostan. It is a very ancient town; the inhabitants date its foundation from the time of Noah. Population of the pachalic, according to Hassel, 300,000. Square miles, 21,400.

ERZEBIRGE (German; meaning the ore mountains); a chain of mountains, running between Saxony and Bohemia, till they meet the Riesengebirge, on the frontiers of Silesia. The highest summits, which are covered with snow in winter, extend from 3600 to 3900 feet above the level of the sea. The Erzgebirge consist chiefly of the gneiss granite formation, and in this the principal beds of ore are to be found. Masses of porphyry and basalt are found on and in this formation. Towards Saxony, beds of clay slate rest on the granite and gneiss; and above the clay slate are granite and syenite. Towards Bohemia, the primitive formation is covered for a considerable extent by brown coal mountains, and the remainder by clay slate. These mountains are rich in mines of silver, iron, copper, lead, coal, cobalt, arsenic, &c.

Erzgebirge is also the name of one of the five circles of the kingdom of Saxony, comprising 2456 square miles, with 450 to 500,000 inhabitants. The whole circle is one of the most industrious in Germany. Mining occupies more than 12,000 of the people. There are manufactories of arsenic, and have become important by means of the neighbouring silver and tin mines, the smelting works, the manufactories of arsenic, and of a blue colour from cobalt. The Erzgebirge is the chief manufacturing district in Saxony. Annaberg is the chief seat of the lace-making industry. Of all the cloths, stockings, arms, needles, gold and silver lace, of flax and wool, and cotton. Chemnitz and Zwickau, towns in this circle, carry on an active business in the sale of the manufactured goods, which are exported to many parts of the world. Es, or Els (ε or εί); a Greek preposition, signifying to. It has been added, in the Romanic language, to several geographical names, and has contributed to corrupt the ancient names; for instance, Sestri, the modern name of Athens, is formed from *Es上面* of Athens; Stives, for *es Tassai*, to Thessalos; Istamboul, or Stamboul (Constantinople) for *es tia poli*, literally translated, to the city.

ESCALADE, in war; a furious attack of a wall or a rampart, carried on with ladders, to pass the rampart, or make its breach, without proceeding in form, breaking ground, or carrying on regular works to secure the men.

ESCAPE, in law, is where a person arrested gains his liberty before he is delivered by law. Escapes are either in civil or criminal cases; and may be distinguished into voluntary and negligent; voluntary, where it is with the consent of the keeper; negligent, where it is for want of due care. In civil cases, after the prisoner has been suffered voluntarily to escape, the sheriff can never after retake him, and must answer for the debt; but the plaintiff may re-

ESCHENBACH, WOLFRAM VON, who flourished in the first half of the thirteenth century; one of the most volubilious and also of the most distinguished German poets of the Saxonian period. Of a lively imagination and penetrating spirit, rich and original in his descriptions, and a complete master of language and versification, he elevated himself to a high rank among epic poets. Nothing is known of his private circumstances, except that he belonged to a noble family, probably in the Upper Palatinate. He was knighted at Hennepen, and passed his life in the performance of the duties of chivalry, being supported by his poetical genius and the liberality of princes. He distinguished himself among the minne-

ESCHENBACH, JOHN JOACHIM, professor in the Carolinum at Brunswick, was born at Hamburg, in 1743, and died at Brunswick, in 1794. He received his early education at Hamburg, then studied at Leipsic, under Ernst, Gallert, Morus, and Clodius, and at Gottingen, under Heyne and Michaelis. He afterwards went to Brunswick as a tutor; and, on the death of the poet Zacharias, he was appointed to the professorship in the Carolinum. He was graduated for the bar, which he filled till his death. Germany is indebted to him for an acquaintance with many good English writers on aesthetics; for example, Brown, Webb,
Burney, Fuseli (properly, Fuseli) and Hurd. Eschenburg, translated their works, with valuable additions to some of them. He also published, in different periodicals, accounts of English literature, and thus made the literary treasures of England an object of great admiration among the Germans. His most valuable work was a translation of Schlassepere (Zurich, 1755—57, 14 vols., also 1798—1806, twelve vols.). Wieland had engaged in this undertaking before Eschenburg; but the translation of the latter's complete work has yet been made, and is still esteemed, though inferior to Schlegel's in elegance, harmony, and verbal accuracy. He extended his reputation by the publication of his lectures, delivered in the Carolinum, by his Theorie und Literatur der schonen Wissenschaften, nebst einer Beispielesammlung dazu, and by his Handbuch der classischen Literatur.

ESCHINES. See Aschines. ESCHYLUS. See Eschylus. ESCLEPIADES. See Esclepiades. ESCLEPIADIC. See Esclepiadie.

ESCOLUMUS, ESCULO, or ESCOLOMARQUE, the confidential friend of Ferdinand VII., was born in 1762, of an ancient family of Navarre, and was, in his youth, page to Charles III. From an inclination for serious studies, he chose a religious profession, and at the age of twenty-one, procured a canonicate in the cathedral at Saragossa. His amiable qualities acquired for him many friends and patrons at court, and he was appointed instructor to the prince of Asturias. He soon succeeded in winning the favour of the prince. The courage and frankness with which he expressed himself to the king and queen in 1797, 1798, on the subject of the calamities which press so heavily on Spain, drew upon him the enmity of the prince of peace (Godoy), who procured his banishment to Toledo. EscOilma sought, even in his exile, by memorials which he sent to the king, to undeceive the royal family as to the favourite, but ineffectually. The prince of peace gained a continually increasing influence with the king, so that the prince of Asturias, in March 1807, wrote to EscOilma, "that he was in fear for his crown," and "looked to him for advice and assistance." EscOilma immediately hastened to Madrid, where the revolt of the Escurial was agitated. He defended the prince of Asturias, with so much ability as to effect a decided change in public opinion. When Ferdinand, the then king, was deposed, EscOilma was made counsellor of state. He advised the journey to Bayonne, and accompanied Ferdinand thither. He was present at the interview with Napoleon, who knew his influence, and laboured to gain him. EscOilma constantly exhorted the king of Spain not to abdicate the throne, whatever consequences might ensue. The abdication, however, took place, and EscOilma accompanied Ferdinand to Valengay, but was soon after separated from him, and removed to Bourges, where he lived in retirement four and a half years. He returned to Valengay, December 1813, when the course of events had rendered Napoleon ineligible to a reconciliation with Ferdinand VII. and the Infant, and took part in all the proceedings which seated the Bourbons on the throne of Spain, immediately before the final fall of Napoleon. In 1814, he left the court, and retired to Saragossa. He fell into disgrace, because he had advised the king to accede to inquisitorial, and in party, the constitution of the cortes. He behaved with firmness when arrested by order of the king. Some time after, he was recalled, but was disgraced a second time. EscOilma also acquired some reputation as an author, and translated into Spanish Young's Night Thoughts, Milton's Paradise Lost, and other works. His explanation of the motives which induced Ferdinand to go to Bayonne, is an important document for the history of the time. He died in exile, at Ronda, in Andalusia, in 1820. His life is a fair commentary on Ferdinand's character.

ESCURIL. See Esculapius. ESCURIL (of Escurial), a celebrated building in Spain, is situated midway up the ascent of the chain of mountains which bounds Old Castile, twenty-two miles from Madrid. The choice of this rugged situation by Philip II. indicates the stern and melancholy character which history ascribes to that prince. It was erected in consequence of a vow made by Philip, on the day of the battle of St Quentin, at which, however, he was not present. He dedicated it to St Lawrence, whose festival was on that day. Everything in the Escurial reminds us of the instrument of the martyrdom of this saint—a gridiron. It is seen upon the doors, altars, and sacerdotal habits; the edifice itself is a quadrangle in form, a large building, with the principal front to the west, behind which is a mountain; the opposite side, which faces Madrid, has the form of the shortened handle of a gridiron; and the four legs are represented by the four little square towers which rise above the four angles. The exterior of the Escurial is not conspicuous in the architecture. It has rather the austere simplicity of a convent than the elegance of a palace. In front of the door of the church is a fine peristyle; over the front of which are six colossal statues of the kings of Israel, which appear as if just balanced on their slender pedestals. The two in the middle are David and Solomon. The sculptor has endeavoured to give to these two statues the features of Charles V. and Philip II. The number of windows, doors, and courts, has been exaggerated to a ridiculous degree, in the descriptions of the abbe de Vayrac and senior Colmenar. They state that there are 17,000 doors in the whole, there is something striking, but it does not correspond to the idea formed of it from the accounts given by those writers. The edifice is built of hewn stone, of a species of granite; its colour has become brown with time, and adds to the austerity of the building. It is a quadrangle, 740 feet long on each side, 550 feet square, and 210 feet high. The Escurial is said to have cost 50,000,000 dollars.

The most remarkable pictures are the Virgin Mary, by Guido; the Woman taken in Adultery, and St Jerome writing, by Vaulxie; the Martyrdom of St Ursula, the Fall of the Angels, by Pellegrino Thaddi, in the church, where are also some good paintings by Navarete and by Lucas Cambiano. In the two vestibules are several pictures of Paul Veronese, Rubens, Spagnoletto, and Titian; an Assumption, by Annibal Carracci, and the Lord's Supper, by Tinoretto. The altar piece in the vestry, by the Portuguese Claude Costelo, is one of the most striking; it is Christ in Glory, a vision, a reality, on his knees before the holy sacrament. The pictures of St Sebastian, of natural size, and the Saviour disputing with a doctor of the law, are some of the best among those of Titian. Three by Raphael—one, called the Pear, on account of its superior excellence, is a Holland picture; another, the Virgin Adoring the Child, the modesty of the Virgin, and her embarrassment on appearing before Elizabeth, with the unexpected signs of her pregnancy, cannot be too much admired. The Pantheon is a subterranean apartment, situated immediately beneath the grand altar of the chapel. A long, arched staircase, lined on all sides with polished marble, and descending far below the surface of the
ESCUTCHEON—ESPINASSE.

ESMERALDAS; a province of Colombia, on the coast of the Pacific ocean, abounding in wax, copal, balsams, manilla, indigo, tobacco, and excellent cacao. Its most remarkable objects are the rich and valuable woods, and contain gold mines. Fine emeralds are also found in this province. Esmerealdas is likewise the name of a river and a seaport of this province.

ESNEH, ESNE, or ASNA (called, by the Egyptians, Sne, or Sna); a city of Upper Egypt, in the Thebaid, on the left bank of the Nile, about twenty-seven miles S. of the ruins of Thebes, and 350 S.S.E. of Cairo; lat. 25° 17' 38' N.; lon. 33° 34' 56" E. Esneh stands on the site of the ancient Latopolis. Among the ruins there is a beautiful portico of twenty-four columns, which is one of the most perfect remains of Egyptian architecture. The ceiling contains a zodiac, which has been supposed to be 2000 years older than that of Denderah; but Champollion, in one of his letters, dated 1829, is decidedly of the opinion that the great temple of Esneh, as it is called, instead of being one of the most ancient buildings of Egypt, is of the most modern. He draws this conclusion from the rudeness and stiffness of the buss-reliefs and hieroglyphics, as well as from the inscriptions. The latter contain merely the names of different Roman emperors. "The real age of the "promont of Esneh," says M. Champollion, "is, therefore, not of a remote period than the reign of the emperor Claudius; and the sculptures, among which is the famous zodiac, are as late as the time of Caracalla." The marquis Spineto, in his Lectures on the Elements of Hieroglyphics, is of the same opinion. Esneh is of considerable importance in a commercial point of view. The great caravan comming from Sennan stops at this place, and a camel market, famous throughout all Egypt, is held here. Among the population of Esneh are 300 Coptic families. Not far from it are the ruins of another temple, with a zodiac, not so well preserved, however, as that in the ceiling. Feb. 25, 1789, the French were attacked here by the Mamelukes.

ESOP. See Esop.

ESOTERIC (Greek; secret, revealed only to the initiated). In the mysteries or secret societies of the ancient, the doctrines were distinguished into the esoterica and exoterica. The former for the initiated, who were permitted to enter into the sanctuary itself (the Esoterica), and the latter for the uninitiated (the Esoterica), who remained in the outer court. The same distinction is also made, in philosophy, between those doctrines which belong peculiarly to the initiated, and those which are adapted to the limited capacities of the unlearned.

ESPAGNOLETTO. See Spagnoleto.

ESPALIERS; rows of trees planted about a garden, and trained up regularly to a lattice of wood-work, in a close hedge, for the defence of tender plants.

ESPINASSE, JULIE JEANNE ELENOIRE. This amiable lady, who united the most brilliant talents to a heart susceptible of the warmest love, was born at Lyons, 1752. She was an illegitimate child, but passed for the daughter of a citizen, whose name she bore. She was selected as a companion by the marquises de Delfland, whose offers she gladly accepted, being in a state of extreme indigence. At first, the two ladies lived together in the greatest harmony; but the superior attractions of Julie, which captivated even d'Alembert, a most devoted admirer of du Delfland, soon made the marquise regard her as a dangerous rival, and their connexion was broken off. Mlle. l'Espinasse, however, had already made many friends, and the king, by the recommendation of the duke de Choiseul granted her a pension.

earth, conducts to this apartment. The whole interior is lined with dark marble, beautifully veined, and of great lustre. This is the burying-place of the Spanish kings. Its most notable feature are those princes who have not reigned are deposited in one chamber, those of the kings and queens in another. The remains of the duke of Vendedome rest in the Pantheon, as those of marshal Turenne do in the church of St Denis. A superb lustre, pendent from the cupola, is lighted up on extraordinary occasions. The pictures which contain the bodies of the kings and queens are placed on each side of an altar, in three rows, and in different compartments. The cases are of bronze and porphyry, and simple yet noble in their form. The two great cloisters are painted in fresco; the paintings are by Tiibaldi, and the figures are of colossal size. Guercino, Velasques, and other celebrated painters have ornamented several galleries and cloisters. Here is the famous picture of Raphael, called the Madonna del Pes. This picture represents the young Tobit, conducted by the angel Raphael, offering five years an tribute of his fish. The group is composed, beside the angel and Tobit, of Christ, the Virgin Mary, and St Jerome, in a cardinal's habit, reading the Bible to them. The library, founded by Philip II., and much augmented by his son, is remarkable for the large number of rare books, MSS., and prints, and for the paintings. There are several pleasant walks at a short distance from the convent, belonging to the Infantes. The monks are very liberal, and allow any person, of decent dress and demeanour, free access to the library and all its books. The royal family used to pass six weeks here every year.

ESCUTCHEON, in heraldry, is derived from the French ecusson, and that from the Latin escutum. It signifies the shield whereon coats of arms are represented.

ESK (i.e. water). There are seven small rivers in Scotland of this name, viz., the Esk, the Black Esk, and the White Esk, in Dumfriesshire; the North Esk and South Esk in Forfarshire; and the North Esk and South Esk in Edinburghshire. The eastern district of Dumfriesshire is called Eskdale, and Eskdalemuir is the name of a parish in the same county.

ESKIMAUX. See Esquimaux.

ESMENARD, JOSEPH ALPHONSE; a French poet, born in 1769, at Pelissanne, in Provence. After having established himself at Marseilles, he made a voyage to St Domingo, and, on his return, formed an acquaintance with Marmontel, which developed his literary tastes. At the beginning of the revolution, he belonged to the club of Feuillans, and, on its downfall, was obliged to leave the country. He travelled of Greece in England, Germany, and Italy, and, on his return from Constantinople, settled in Venice, where he formed the design of his poem La Navigation. He returned to France, was again banished for his political writings, returned after the revolution of the 18th Brumaire, and laboured with L. Hary, and Fontanes on the Mereure de la France. He accompanied Le Clerc to St Domingo, and, after his return, received a place in the ministry of the interior. His Navigation appeared in the year 1805. He is blamed for many defects, but his talent for describing scenes on the ocean is universally admired. In 1808, he brought upon the stage an opera, entitled Teseo, and the libretto was written by Napoleon, after having been assailed by numerous enemies, and made a member of the institute. After three months, he returned from exile, and died in 1811.
From this time, she shone in the great world, surrounded by a brilliant circle of admirers. D'Alembert endeavoured in vain to obtain her affections; he only succeeded in obtaining her esteem. The marquis of Morn, a young Spanish nobleman, loved her, and was loved in return; but was soon superseded in her affections by colonel Guibert, celebrated for his connexion with Frederic II. Her letters show the strength of her sensibility and the caprices of her love, which was blindly lavished without regard to reciprocation. She died in 1776.

**ESPIRITU-SANTO, or SPIRITU-SANTO** (the Spanish, for Holy Ghost); a name often occurring in geography. For instance, it belongs to a place on the island of Cuba; to a bay of Florida; to an island in the gulf of California; to a bay of Mexico, &c.

**ESPLANADE,** in fortification; the sloping of the parapet of the covered way towards the open country; the same with glacis.

**ESPREMENIL,** JAMES DEVAL D', a native of Pondicherry, councillor of the parliament of Paris, and deputy from the nobility to the states-general in 1789, was distinguished for talent and virtue. D'Espreménil had entertained the project of restoring the states-general; and at the session of the parliament, Nov. 19, 1787, he spoke with energy in favour of that scheme, and in opposition to the measures of the ministry. He renewed his animadversions, May 3, 1788, in consequence of which he was seized and banished to the Isle of St Margaret. Being recalled to Paris in 1789, he was nominated a deputy to the states-general, when he defended the monarchy against innovators with as much warmth as he had before opposed the despotism of the ministry. He made a speech against the union of the different orders, and, when he saw the minority of the nobles about to leave the chamber of session, he exclaimed, "We are on the field of battle: the cowards desert us; but let us close our ranks, and we are still strong enough." In opposing the establishment of paper money, in September, 1790, he made the singular proposition to re-establish the monarchy in the full plentitude of its power. He afterwards endeavoured in vain to curb the revolutionary fury, to which he was destined to fall a victim. On the 27th of July, 1792, he was assailed by a band of armed men, by whom he was badly wounded, and narrowly escaped being killed. His friends then entreated him to leave France; but he refused, saying he ought to await the consequences of a revolution of which he had been one of the prime movers. He was at length condemned by the revolutionary tribunal, and perished on the scaffold in 1793, in the forty-eighth year of his age.

**ESPRIT,** in French, signifies spirit. In English, the phrase *esprit de corps* is not unfrequently used in the sense of attachment to the class or body of which one is a member.

**ESQUIMAUX;** an Indian nation of North America, occupying nearly all of the northern part of the continent, from Prince William's sound along the coasts of the icy sea and of Hudson's bay to the borders of the Atlantic on the Labrador coast. Those to the N. W. of Hudson's bay are of a larger size than those of Labrador, but they are all dwarfish. Their origin is uncertain; but they are evidently different from the aborigines generally diffused over the globe, both in size, character, habits of living, complexion, and stature. Their features are harsh and disagreeable, their cheek bones prominent, their noses small and flat, their eyes small and black, and their lips thick. They are clothed in the skins of marine animals, which constitute their principal subsistence. The following cut represents their domestic costume.

Besides taking seals and whales, they hunt the reindeer, the bear, wolves, and other wild beasts. Their domestic animals are a large kind of dogs, which they use for draught and the chase, and which they prefer to the reindeer. Their arms are bows and arrows, spears and knives. Their canoes are composed of a frame of wood or whalebone, covered with seal skins. The smaller kind, capable of containing twenty persons, is called *oomiak.* They sometimes use a larger kind, called *oowsag,* for transporting luggage and removing their families, which afford accommodations for twenty persons. There is no authentic account of their numbers. They are represented as being without any kind of government, and making up all their religious notions. They wrap up the dead in skin, and deposit the body, with the arms of the deceased, in the hollow of a rock. In 1764, the Moravian Brethren from Greenland established a mission in Labrador. They have induced the Esquimaux within their influence to abolish the custom of putting to death widows and orphans, and that of abandoning the aged who were incapable of procuring their own subsistence. The missionaries are of opinion that the Esquimaux originated from Greenland, on account of the great similarity of their manners and customs, and of their language, to those of the Greenlanders.

**ESQUIRE;** anciently, the person that attended a knight in the time of war, and carried his shield. Those to whom the title of *esquire* is now due in England, are, all noblemen's younger sons, and the eldest sons of such younger sons; the eldest sons of knights, and their eldest sons; the officers of the king's courts, and of his household; counsellors at law, justices of the peace, &c., though the latter are only esquires in reputation; besides, a justice of the peace holds this title no longer than he is in commission, in case he is not otherwise qualified to bear it; but a sheriff of a county, who is a superior officer, retains the title of esquire during life, in consequence of the trust once reposed in him. The heads of some ancient families are esquires by right of prescription.

**ESS, CHARLES VAN,** born in 1770, at Warburg, in the bishopric of Paderborn, entered the Benedictine abbey of Huysburg, near Halberstadt, in 1788, where he subsequently became prior; but, on the supposition of the abbey, in 1804, he became a parish preacher at this place. In 1811, the bishop of Paderborn appointed him episcopal commissioner, with the full powers of vicar-general in the departments of the Elbe and Saxon. In this situation, he evinced a great predilection for the Roman see. It is said that he took but little part in the translation of the New Testament which was published under his and his brother's name, and he subsequently disclaimed any co-operation in it. In 1810, he wrote a History of the Abbey of Huysburg, at the time of the Protestant Jubilee, in 1817, a Short History of
Religion, which was publicly burnt by the scholars in Halberstadt, at the celebration of the festival of the reformation, and which was answered by some scholars in the vicinity. He died Oct. 22, 1824.— His brother, Leander von Ess, Benedictine of the abbey of Marienmünster, in the territory of Paderborn, and a fellow of the society of Schwalenberg, in the principality of Lippe, and, since 1813, professor extraordinary of theology, and preacher at Marburg, also one of the directors of the seminary for teachers at that city, has distinguished himself by his translation of the New Testament, published at Sulzbach, by Sulzbach, at a very early period, it is true; but has lately prohibited this translation; but, in 1829, a new edition appeared, under the name of Leander only. This translation has had a great influence upon the German Catholics.

ESSAYING. See Atoning.

ESSENES, or ESSEANS; a sect among the Jews, the origin of which is unknown, as well as the etymology of their name. They are first mentioned in the book of the Maccabees, about B. C. 150. They lived in solitude, and had all their possessions in common. Certain examinations preceded the admission, and even into the sect; and, with the oil of the tree, which they sacrificed, they sacrificed no living creature, and that they shunned cities. Josephus says, that they sent presents to the temple, but offered no sacrifices there. They had purer ideas of God than the Jews commonly entertained, a strict code of morals, and a Pythagorean manner of life. Instead of performing external rites, they devoted themselves to prayer and silent devotion, scrupulously observed the Sabbath, were extremely abstinent, and healed diseases of every kind by roots and herbs. They rejected the subtleties of the Pharisees and the epicurianism of the Saducees.

History nowhere supports the supposition that Jesus and John were members of this body. (See Hellermann's Ancient Accounts of the Essenes and Therapeutæ, Berlin, 1821.) The principal ancient writers who give an account of this sect are Josephus, Philo, and Pliny.

ESSENTIAL OILS. This name is applied to those volatile fluids usually obtained from aromatic plants, by subjecting them to distillation with water. The oil is volatilized with the aqueous vapour, and is easily condensed; a small portion of it is retained in solution by the water; but the greater part separates, and is obtained pure from the difference in their specific gravity. They are employed, in applications to the human body, in the rind of the orange and lemon, the oil exists in distinct vessels, and may be obtained by expression. The principal volatile or essential oils are those of turpentine, aniseed, nutmeg, lavender, cloves, caraway, peppermint, spearmint, sauzafra, camomile, and coriander. The taste of these oils is acid and burning; and their odour very pungent, generally resembling the taste and smell of the vegetables affording them. They are generally fluid, and remain so even at a low temperature; but some condense at a very moderate degree of cold, and others are naturally concrete. They are extremely volatile, and boil at a temperature considerably above that of boiling water; thus oil of turpentine boils at 315°. They are very soluble in strong alcohol, but, on adding water largely, are precipitated. They are soluble in ether in like manner, but do not form soaciated with it at a later period, a property which has distinguished from the fixed oils. They are readily inflamed by strong nitric acid; especially with the precaution of adding a little sulphuric acid to render the former more concentrated. Exposed to the action of the air, they undergo an alteration in consequence of which, they lose a part, and gradually change into a solid matter, resembling the true resins. When digested with sulphur, they unite with it, forming what have been called balamae of sulphur.

One of the most useful and abundant of the essential oils is that of turpentine, commonly called spirit of turpentine. It is obtained by distilling turpentine in heated water, in small vessels, and from hence opium albumic. It is perfectly limpid and colourless, has a strong smell, a bitterish taste, boils at 316°, and is extremely inflammable. It is the solvent employed in making a variety of varnishes; but for purposes of nicety, it requires to be rectified by a second distillation. In general, the volatile oils are used in the practice of medicine, or as perfumes. Those applied to the latter use, as the essence of rose, of jasmine, violet, &c., are possessed of a more feeble odour, and, being obtained from the flowers of their respective plants, require much care in their preparation. This is done by spreading upon white wool, impregnated with olive oil, the petals of the flowers, and leaving them for some time, covered over with a woollen cloth, upon which flowers are also scattered. The flowers are renewed from time to time, until the olive oil employed appears to be saturated with the oil of the tree, when this last is separated by digesting the wool in alcohol.

ESSEQUIBO; a river of British Guiana, which flows into the Atlantic; lat. 5° 30' W.; lat. 7° N. It is 20 miles wide at its mouth, but difficult of navigation, on account of the sand banks, which run in different directions across its entrance. It contains a number of islands. The influence of the tide is felt about 100 miles up the river.

ESSEQUIBO; a settlement of British Guiana, on the borders of the above river, originally belonging to the Dutch, but, after having several times changed possessors, was finally ceded to Great Britain in 1814. The settlement is about 30 miles from the mouth of the river, and extends 10 miles along the coast, being built on a low, flat, well drained land, and well cultivated, and extremely fertile, producing coffee, cotton, cocoa, and sugar.

ESSEX, a maritime county of England, on the south-east coast. It anciently formed a part of the territories of the Trinobantes, a British people, whose quarrels with their neighbours appear to have made way for the invasion of this island by the Romans, under whose government this county was included in the province called Flavia Cæsariensia, and it was the seat of some of their earliest and most flourishing colonial establishments. When the Saxons conquered England, the Saxons, who were the aborigines in the country, erected that of Essex, or East Saxony, so named from its relative situation. It comprehended Middlesex, and part of Hertfordshire, as well as this county, to which the appellation has been ultimately appropriated.

Essex forms the southern part of that tract of country on the eastern coast which extends in a dead level, unbroken by any considerable elevation, over a greater space than in any other part of the island. But though there are no rocky ridges, and the eminences that occur are but insignificant, yet the land is dry and Table, yielding a fair profit to the agriculturist. In the south-western part of the county there is abundance of wood and pasture; northwards, the face of the country becomes more open and uneven; while towards the sea-coast it gradually declines into marshy grounds, deeply watered by the rivers, which, after flowing, the fine pasturage afforded by these tracts (commonly termed the hundreds of Essex), scarcely counterbalances their injurious effect on the human constitution. A similar line of marshes extends along the banks of the Thames; but the northern part of the coast, beyond the county of Middlesex, is more elevated and healthy country. Agricultural
improvements have been carried on in this county very extensively. By means of imbanking, draining, &c., lands have been reclaimed or rendered more productive; and the construction of new roads has contributed to the advantage of the farmer, and given a spur to industry by affording facilities for carriage and communication. The principal productions of the soil are wheat and other kinds of grain, beans, peas, tares, rape, mustard, rye-grass, trefoil, hops, cresses, salsify, and peas, besides garden plants and roots, the culture of which is chiefly confined to the vicinity of the metropolis. Epping Forest is famous for the excellence of the butter and cream which it furnishes to the London dealers; and the county is proverbially noted for its calves, the number bred and fattened here being greater than in any other district in the kingdom. Its chief rivers are the Coln, the Blackwater, the Chelmar, the Crouch, and the Rodden. Colchester and Chelmsford are its chief towns. Population in 1831, 317,583.

ESSLINGEN. See Aspern.

ESTACHAR, or ESTAKAR, or ISTACHAR; a town in Persia, in Chusistan; 30 miles N. N. E. of Schiras, 160 S. S. E. of Isphahan; lon. 53° 40' E.; lat. 30° 5' N. Near it are the ruins of ancient Persepolis. These ruins are on a plain, six miles in breadth, and 105 in length, from north-west to south-east, with a sinuous course, and the inhabitants pretend that it included 880 villages. The soil is chiefly converted into arable land, and watered by a great number of rivulets. According to LeBruyn, no traces of the city now remain; the magnificent ruins which he saw in the year 1704, and of which he has given a description, with many plates, are those of the royal palace of the ancient kings of Persia, which the Persians call Chilmaar, or Chalmenaer, which signifies forty columns. Among other ruins are those of a tomb, supposed to be the tomb of Darius. "

ESTAFET; a particular kind of courier, who goes only a certain distance, when he is relieved, like a mail-carrier. He rides on horseback, and is furnished by the post-office. Estafettes travel faster than the mails, and may be had at any time on the European continent. They are often employed by merchants to convey information of fluctuations in the markets, to enable one, the owner, or his agents, to take action, to the highest importance. Estafettes are bound to perform the different stages in a certain time, and not to carry any other letters than those of their employer, without his permission. In Italian, the word is staffetta, in German, Staffette, in French, estafette, in Spanish, estafeta, the Italian being the original. It is probably derived fromstaffa, a stirrup, staffetta, signifying a small stirrup, perhaps formerly used in preference by estafettes.

"ESTAFFETTE D'ALGER, L'. At the time of the French expedition to Algiers, in 1830, a semi-weekly paper of this name was published in Algeria; it was a political, military, commercial, and literary journal, containing the bulletins, &c., of the armies, describing the engagements with lithographic plans, giving sketches of the African commerce, and of the resources and customs of the country, military anec-
dotes, &c. Such a paper is unique. We cannot pretend to say whether it will have the same success as the Carros,
or, Alexander an 'Aggius 'Asmud. But we should then, probably, complain as much of the mass of information as we now do of its defective-
ness.

ESTAMINET (French); a public place where smoking is permitted, when, in the Netherlands, it is not allowed generally in coffee-houses, &c. In the Netherlands, public houses in general are called estaminets, because smoking is permitted in all. Estaminets, with their floods of beer and clouds of smoke, furnish an important part of a Dutchman's happiness. In London, also, coffee-houses have been given to coffee-houses where smoking is permitted.

ESTATE, in law, signifies the title or interest which a person has in lands, tenements, hereditaments, or other effects, the word being derived from the Latin status, which means the condition or circumstances in which a thing stands in regard to its pro-

Estate is real or personal. The phrase personal estate is applicable not only to movables, goods, money, bonds, notes, but also to some fixtures temporarily attached to lands or buildings; and the distinction between those fixtures which are temporarily such, and those which belong to, and form a part of the house, or other real estate, is of import-
ance, as this distinction will determine how it is to be attached on mesne process, or seized and sold, or set off on an execution, and also how it descends on the decease of the proprietor. But personal estate also applies to some interests in lands or houses; thus a lease of them for a certain number of years, though it be more than a hundred, and so longer than any person is likely to live, is personal estate; and yet an estate for the life of the owner, or of any other person, in these subjects, though the person, by whose life the interest is limited, may be ever so old, is real estate. In London also, the same has been a estate is real estate, and is subject to the law regulating such estate, in regard to sales and descents. Real estate in lands is of various kinds and descriptions, according to the quantity of interest, its duration, or the time by which it is limited in respect to its com-

menecement or termination, and the number and con-
dition of the owners. A fee simple is the simplest estate which the law admits of. (See Fee.) A free-
hold is an estate for the life of any person or persons, or any greater estate. An estate in tail is one limited to certain heirs. (See Entail.) Only real estate and a freehold greater than for the life of one person, can be entailed; but such an estate is of various kinds, such as tail-male, where it descends, in successive order, to the male heirs of the grantee in direct descent; tail-female, where it is thus limited to the female descendants; if it goes in successive order to his descendants without any distinction, it is called an estate in tail general; if it descends to all or any of his descendants, as the children of a certain wife, it is an estate in tail-special. An estate in remainder is one of which the owner is come into possession after the expiration of an intermediate estate of another person, or number of persons or heirs; and so also is an estate in reversion; thus, if one grants an estate tail, this estate tail may expire, in which case the lands will come back or revert to the grantor, and his estate, which still remains to him after he has granted the estate tail, is therefore called a rever-

sion. As to the number of owners, an estate in com-

mon is a freehold belonging to more than one prop-

rietor, in undivided shares, and so also is an estate in joint-tenancy; but there is this distinction between these two kinds of estates, that one joint-tenant dies, his share goes to the other joint-tenants, which is not the case in tenancies in common. An estate in copar

enancy arises when an estate in fee simple descends, without a will, to the joint tenants, to his daugh-
ters, sisters, aunts, or female cousins, or their repre-
sentatives, being females; and they are called copar-

eners, or, for brevity, parceners. Real estate left to any one by will is called a devise, or an estate by devise, in distinction from a bequest of personal proper-

try, which is called a legacy.

ESTATES (in politics). Man, in the rudest state of human existence, lives almost entirely indepen-
deut. We cannot properly speak of liberty in such a state, because liberty, truly so called, implies the protection of individuals, the maintenance of their property, the protection of their persons, and organized society, the main object of political institutions being to secure individual liberty, by affording equal protection to all. But what a number of gradations are to be found between the lawlessness of the savage and the rational independence of the citizen of a free state, is now a prominent and pressing question in the progress of man from the one to the other of these points:—a. The state of unsettled and roving tribes, the hunters and nomads. Though very great difference exists among nations in this state, yet all political development is so much checked by the non-existence of landed property (the beginning of proper civilization), that we may class them all together. b. The patriarchal state, in which the authority and power of the father of a family (patria potentas), that of the magistrate and of the priest are united in one person: this is the first rude beginning of political civilization. c. The state in which the father and the magistrate are separated, but that of the priest and the magistrate still remain blended. This is the theocratic state. In this, priests form a separate caste, and are the rulers. d. When the authority of the father, priest, and magistrate are separated, and the state is still more governed after the Westphalian system, it is clearly understood, but yet birth decides to what class an individual belongs. This is the state of castes. The whole people is divided into different classes, with different privileges. e. That state of government, which prevails in many parts of Europe, where a distinction is made between nobility, privileges, and correspond to the castes in the East, whilst the other subjects are divided into classes distinguished by their occupations, as peasants, citizens, &c. f. That state of political society in which all the members have equal privileges and rights, and are subject to equal burdens. In this class must be included the republics of antiquity, notwithstanding a large portion of the inhabitants were in servitude; for the slaves, in these cases, were not considered as belonging to the state, were not members of the political society. Such an anomalous form of government as existed in Algiers, where a tribe of soldiers, kept up by perpetual recruits from abroad, and excluding their own children from any share in their political growth, yet being protected by the Hermione, and tyrannized over the other inhabitants of the country, without allowing them any rights (although they did not actually treat them as slaves, at least not as the property of individuals)—such a government does not fall under any one of the established divisions. Hence, we may be said to have a blank light from an association of robbers. That condition of government mentioned under e forms the subject of this article.

Estates are those political bodies which partake either directly or by representation, in the government: they are different from corporations, which very often had, and still have, certain political privileges. Estates are of Teutonic origin, being found only in countries occupied by the descendants of Teutonic tribes. They are to be considered as a consequence of the feudal system, which originated from certain customs prevalent among the Germans, and from their conquests. (See Feudal System.) From the feudal system sprang the modern hereditary nobles—a privileged body, partaking essentially in, or, in some instances, chiefly forming the government. (See Nobility.) Bondage became gradually established—an institution, in many cases, of the most atrocious kind, which has been to this day maintained. (See Villenage.) At the same time that the high nobility began to constitute a distinct and hereditary class (which is of much later date than the origin of feudalism), the high clergy, in many countries, began to participate in the government as a body, which they were, in those barbarous times, as much entitled to as the warlike nobility; since they were the only members of society with whom the little knowledge which had survived the fearful storms of the dark ages had taken refuge. More or less distinct from each other, and from the lower orders of their respective classes, the high nobility and clergy continued to form the estates, which, together with the prince, constituted the general government so far as any general government can be said to have existed, when every feudal lord was, in most respects, entirely independent, and the higher clergy were almost always feudatory, but that a constitution and hereditary interests, privileges, and liberties prevented any general and orderly administration of government and justice. "That prodigious fabric (as Hume calls it), for several centuries, preserved such a mixture of liberty and oppression, order and anarchy, stability and revolution, as was never experienced in any other age, or any other part of the world." But the time appeared when cities began to claim and assume political rights, the time to which we may apply, in respect of all Europe, what Spelman applies to England at the time of the Norman conquest, Nova sectorum nascentur orbis.

It is this time that we owe the origin of the third estate, or citizens, from whom, through their contests with the other estates or estate (if the nobility and clergy were united), and through their greater number, which rendered a representation of them necessary, originated more general views of the administration of government and justice, more equitable laws, and more correct notions of individual liberty. To the historian, who sees, amid the conflicts of feudalism, the beginning of the political importance of the cities, it is like the first appearance of the rays of morning after a long and stormy night. (See Municipalities.) The proposition by other estates was too great; nor was it to be expected that the third estate should be in advance of the age: a general representation was not yet founded.
The period from the downfall of the Roman empire to the establishment of the constitution of the United States of America may be called, by way of distinction, the time of privileges, hardly any part of the political system being established, or administered on general principles, or a well organized plan, but almost everything being done by special privileges and grants; common rights arising from citizenship being only recognized, the individual enjoying only certain privileges, as a member of a favoured class. The privileges of these three estates, arising from different causes, and acquired in different ways, were, of course, very different. However, the right to grant taxes was common to all, because taxes were at first considered as a mere gift, to the prince, it being customary in all the Teutonic estates, for the monarch to defray the expenses of government, particularly of war, on account of the large share of property which was everywhere set aside for him, as has been shown in the article Ciel List. (See also Domain.) However, in many countries, the estates were not called together; in others, their conduct rendered them very unpopular. Both their own incapacity and the power of the government rendered them, in most countries, either useless or obnoxious; and, in many countries, both the people and the government were equally desirous to abolish them, though for different reasons. The time of the French revolution approached, and views of general justice and legal equality became popular throughout Europe.

Every reader knows that the system of the estates was abolished in France, and all the countries where the French obtained an ascendency in the new formation, or the reformation of governments. Since the downfall of Napoleon, many governments have re-established the estates, or endeavoured to satisfy the spirit of the age, which calls for a secure individual liberty, by a new organization of them. This subject has been particularly treated in the article Constitution. In Sweden, there is a fourth estate—that of the crown peasants. Circumstances have changed so entirely, civilization has so nearly equalized the different orders, the interests of men have become so generalized, that the institution of estates is now unsuited to the wants of the age; they are being abolished, and are gradually becoming obsolete. They are directly contrary to the spirit of our age, as is the whole feudal system, and can only be considered as remnants of former times, forms from which the spirit has long since departed. They serve at present only to frustrate the most just and reasonable demand of society—individual liberty, protected by equal laws and an equal representation.

ESTE; one of the most ancient and illustrious families of Italy. Muratori traces its origin to those petty princes who governed Tuscany in the time of the Carlingvians (tenth century). In later times, the Este, Rovigo, Montagnana, Casali Maggiore, Pontremoli, and Obertenga, with the title of marquis. Of this family was Guello IV., who, having received the investiture of the duchy of Bavaria, founded the house of Brunswick, which, from this circumstance, was afterwards called the house of Guelph. During the twelfth, thirteenth, and fourteenth centuries, the history of the house of Este is connected with the vicissitudes of the other ruling families and free states of Upper Italy. In the contests between the Guelphs and Ghibellines, the marquises of Este, as leaders of the Guelphs, asserted their independence, and paid a due regard to the laws of the people. The Este, as subjects of Ferrara and Modena, notwithstanding many reverses, this house was much distinguished for its patronage of the arts and sciences. Nicola II. (died 1538) first made the court of Ferrara the seat of refinement and taste. Nicola III. (died 1441) was still more brilliant. He opened, in 1409, the university of Ferrara, founded by his father, Albert, and which had been suppressed during his minority; he also founded that of Parma. His liberality attracted the most distinguished men of the age, among whom were Petrarca, the ancestor of the celebrated poet, and Giovanni Aurispa. He transmitted his love of literature to his sons, Lionel and Borso, who endeavoured to render Ferrara the country of scholars and poets. The reign of Lionel was distinguished neither by conquests nor other great political occurrences; but no prince of the house of Este was more beloved by his contemporaries for his amiable disposition, the charms of his wit, and the elegance of his manners. He encouraged industry and commerce, the arts and sciences by every method, and was himself a model of eloquence in the Latin and Italian languages. He corresponded with the most distinguished men of Italy, and contributed more than any prince of his time to restore ancient literature to the splendour which rendered the sixteenth century so illustrious.

Under his brother and successor, Borso, (died 1471.), agriculture, commerce, and all the arts of peace, were in a flourishing condition. Borso was loud of pomp, but, as he neither maintained fortresses nor armies, his expenditures did not exhaust his finances. The emperor, Frederic III., enchanted with his reception by Borso, on his passage through Ferrara, conferred on him the title of duke of Modena and Reggio. Borso also obtained from the pope, Pius V., the duchy of Ferrara, which he held as a fief of the church.

His successor, Ercole I. (died 1505), suffered much from the Venetians and their allies, who wished to deprive the house of Este of its territories; but Milan, Florence, and Naples took arms in his defence, and a general war was the consequence. After concluding a disadvantageous peace in 1584, Ercole maintained a neutrality for twenty-one years, although important revolutions took place in Italy. During this period, his subjects enjoyed all the blessings of peace, and his capital was distinguished for elegance and grandeur. As each occasion of Scandiano, the celebrated author of Orlando Innamorato, was his friend and minister. Ariosto, yet very young, already enjoyed the ducal favour, and the court of Ferrara was adorned by the most celebrated geniuses of the period.

His son, Alfonso I. (died 1534), succeeded him. His second wife was the famous Lucretia Borgias, whose brilliant talents and love of literature contributed in some measure to obliterate the infamy of her early years. Ariosto was in the service of Alfonso's brother, the cardinal Ippolito, a patron by no means worthy of such a poet. His sacred office could not supply the want of culture and refinement, and he caused the eyes of his brother Julius, his rival in the affections of a lady, to be put out, because she had praised their beauty. Alfonso suffered this barbarous act, at which all Ferrara was indignant, to go unpunished; but the injured Julius and his brother Ferdinand entered into a conspiracy to dethrone the duchy. The attempts of Scandiano, the celebrated poet of Ferrara, the poet of Orlando Innamorato, was his friend and minister. Ariosto, yet very young, already enjoyed the ducal favour, and the court of Ferrara was adorned by the most celebrated geniuses of the period.

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the whole province of Ferrara. He enclosed this
fleet, which ascended the river, within the fire of his
batteries constructed on both banks, captured part,
and burnt the rest: this victory was commemorated by
the most celebrated Italian poets. Pope Julius II.
abandoned the league of Cambrai, and joined the
Venetians, larcinously, whom he could not
persuade to follow his example, under an interdict,
and declared all his papal fiefs forfeited. By this
measure of Julius, Alfonso lost Modena, and was
deserted by his allies. The French, however, con-
tinued in their alliance with him, and he contributed
to this victory which they gained at Pavia in
1512. But, the French being soon after obliged to
leave Italy, Alfonso stood alone. Meanwhile Julius
died; but his successor, Leo X., refused to restore
to Alfonso the cities of Modena and Reggio, which
Francis I., who favoured the house of Este, had
obliged him to promise. The papal court even
attempted the assassination of the duke, by the
captain of his guard. Alfonso, thus menaced on
all sides, was preparing to defend himself, when the
death of Leo X. (1521) delivered the house of Este
from the impending ruin. Adrian VI. revoked the
censure of his predecessor, Alfonso's, and his
successor, seemed to have inherited the hatred of his
uncle Leo; he kept Alfonso out of possession of
Modena, and even endeavoured to deprive him of
his other states. Soon afterwards, the capture of
Rome (1527) enabled the emperor Charles V. to
restore to him his ancient possessions, and to con-
firm the claims of the house of Este. Alfonso
excelled all the Italian princes of his time, in uniting
military glory with political talents; none of them
was surrounded by more distinguished men, and none
has been celebrated by nobler poets; among whom
Ariosto is the most illustrious. His successor, Esteban II. (died 1559), was attached to Charles V., who, by his great preponderance,
subordinated all Italy to his influence. His brother
Ippolito, at Rome, on the contrary, was attached to
the French interest. This cardinal, who built the splen-
did Villa d'Este, at Tivoli, was the most munificent
patron of the arts and sciences of that age. Among
Alfonso II. (died 1597) inherited, it is true, from
his ancestors, a love of letters, but a still greater
fondness for pomp and luxury. His disputes with
the grand duke of Tuscany, regarding the prece-
dency, and his efforts to obtain the crown of Poland,
which had included him in great expense, occupied his
whole political career. His finances were exhausted,
and his subjects burdened with taxes. The first
poets, and most distinguished men of Italy, con-
tinued, however, to adorn his court; but the per-
suasions of Tasso suggest only melancholy or
greatful recollections for the house of Este. The
seven years which the poet passed in a mad house,
either for having dared to love the princess Leonora,
sister of the duke, or because, in the excess of his
passion, he had so far forgot himself as to offend the
pride of his sovereign, bear witness to the cruelty of
Alfonso. Although he was married three times, he
was childless; and he appointed his cousin Cesare
(died 1628) son of a natural son of Alfonso I., his
successor.
On Caesar's accession to the dukedom, pope Cle-
ment VIII. declared the choice to have been illegal,
and all the papal fiefs held by the house of Este to
have reverted to the church. Cesare possessed so
little firmness of character, that he immediately
yielded to the menaces and armies of the pope, and
surrendered Ferrara, together with the other eccle-
siastical fiefs. Fortunately, the emperor did not dis-
pute his succession to the imperial fiefs; he remained
in possession of Modena and Reggio, but was
obliged to dispute the possession of Garfagnano in
two wars with the republic of Lucca, until the
conquest was finally settled by the mediation of
Spain.
The violent temper of his son and successor, Al-
fonso III., at first excited apprehensions of a cruel
and tyrannical reign. But he married Is-
abella of Savoy, to whom he was warmly attached,
effecting such a change in his character, that he
resigned the government into the hands of his eldest
son, Francis, and retired to a capuchin monastery in
the Tyrol, under the name of Giovanni Battista of
Modena, where he passed his days in religious medita-
tion and acts of piety.
Since the loss of Ferrara, the house of Este has
been distinguished only for its ancient splendour.
Francis I., son of Alfonso III., died in 1638; Alfon-
so IV., in 1662; Francis II., in 1694; Rinaldo I. died
in 1737. The last mentioned prince, who was in
early life a cardinal, married Charlotte Felicita of
Brunswick, daughter of the duke of Hanover, and
thus reuniied the two branches of the house of Este,
which had been divided since 1707. His son Fran-
cis III. (died 1780) deserves to be mentioned as a
great patron of literature. He restored the Alcaramo
branches to his subjects, and received pensions from him. Ercole
III., the last duke of Modena, Reggio, and Miran-
dola, married his only daughter, Maria Beatrice, to
the archduke Ferdinand of Austria; a fruit of this
marriage was the second wife of Francis of Austria,
Ercole had accumulated great treasures, but lost the
affections of his subjects, and, on the approach of the
French armies, in 1796, he fled to Venice. Modena
and Reggio were included in the Cisalpine confed-
eracy (republic), and the house of Este was defini-
tively deprived of the sovereignty by the treaty of
Campo Formio, Oct. 17, 1797. See MODENA.
ESTEHIA. See Ethetics.
ESTHONIA, or the GOVERNMENT OF REVAL; the
northern maritime province of Livonia, consisting of
above 8000 square miles, and containing about
300,000 inhabitants. Though much of its soil is
sandy, it produces grain, hemp, flax, cattle, horses,
&c. Reval is the capital, which lies in a small bay
of the Finnish Gulf, and contains about 15,000 inha-
bilants. The islands of Daug, Voros, and Nuckon,
belong to this government. The former is about
forty miles long, and from twenty-six to thirty-six
broad, and has a population of about 10,000. Esto-
honia is in general a flat country, here and there
broken with small eminences.
The Estonians, a Finnic tribe, anciently belonged
to the Russian monarchy, and were called Techtu.
They afterwards attempted to deliver themselves from
the Russian yoke; and, after 1885, when the
country was sold to the Teutonic knights, it made a part
of Livonia, with which, after being 100 years subject to
Sweden, it reverted to Russia. Under the Danes II.,
Russia was received the name of the government of Reval; but,
in 1797, was again called the government of Estonia.
Much has been written on the unhappy situation of
the serfs in Livonia and Estonia. The Estonians
live in mean habitations, are rough and hardy, and
profess the Christian religion. The following cut
represents the costume of the peasantry:

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The emperor Alexander did much towards alleviating the condition of the people; and servitude has been, to a certain extent, abolished in this country.

ESTRAYS and WAIFS. Estrays are any valuable beasts, not wild, found within a lordship, and whose owner is not known, such as are commonly impounded, and not claimed. They are then to be proclaimed in the church and two nearest market towns, on two market days, and, not being claimed by the owner, belong to the king, and now commonly, by grant of the crown, to the lord of the manor, or the liberty.

Waifs are good which are stolen, and waved, or left by the felon on his being pursued, for fear of being apprehended, and forfeited to the king or lord of the manor.

ESTREES, Gabrielle D' (duchess of Beaufort), the mistress of Henry IV. of France, was the daughter of Antoine d'Estrees, a descendant of one of the noblest houses in Picardy, and born about 1571. Gabrielle was about twenty years of age when Henry first saw her in a visit to COEUR DES CASTRES; and her beauty immediately captivated him. Gabrielle, however, who was attached to the Duke of Bellagard, was at first little inclined to gratify the wishes of the king. But Henry still urged his suit, and often stole by the sentinels of his enemies, in the dress of a peasant, to see the object of his love. The heart of the lady was at length moved by such ardour and devotion. She became the mistress of the chivalric monarch, who never loved any other woman so passionately. To escape the severe scrutiny of her father, Henry married her to a nobleman named DAMERVAL, of Liancourt; but, says Sully, il sut empêcher la consommation du mariage, and subsequently dissolved the marriage, on the ground of Damerval's impotency, although this nobleman had had fourteen children by a former wife. Henry intended to raise Gabrielle to the throne as his lawful wife. For this purpose, he not only procured a divorce from Marguerite de Valois, but also raised the county of Beaufort to a duchy, which he bestowed on Gabrielle, thus giving her a high rank at court. This design was strongly opposed by Sully, who often represented to the monarch the bad consequences of such a measure. Gabrielle, therefore, became his bitter enemy, and, instigated by the enemies of the minister, she once so far forgot herself as to urge the king to discharge him. Henry's reply was, "By God, madam, if I must lose one of you, I would rather give up ten mistresses like you, than one servant like him." So ardent, however, was his passion for Gabrielle, that he once wrote to her in a moment of danger, "If I am conquered, you know too well to believe that I shall flee. My last thoughts shall be God's, my last but one yours." Notwithstanding the determination of the king, and the wishes of Gabrielle, their marriage never took place. Just before Easter, in 1699, when negotiations were already in train for the divorce of the king, she retired from court, by the advice of Rene Bénoit, the king's confessor, and went to Paris to spend passion week. On Monday Thursday, having eaten an orange after dinner, she was suddenly seized with convulsions, which distorted her beautiful countenance, and, on Saturday, she died in the most excruciating tortures. Apoplexy, with convulsions, was the cause assigned for her death; but no one can doubt that she was poisoned. The king's grief for her death was excessive; and, what is seldom the case, the royal mistress was universally lamented. Her amiable disposition, the gentleness of her character, and the modesty which prevented her from meddling with public affairs, won her general favour. She had three children by the king, César and Alexander, afterwards dukes of Vendome, and a daughter, Catharine Henrietta, afterwards the wife of the Duke of Elbeuf. Her biography, which appeared some years ago, in France, is accompanied by an interesting correspondence between her and her royal lover.

ESTREES, Louis César (duc d'), marshal of France, and minister of state, born at Paris, in 1695. He fought against the Spaniards, under the duke of Berwick, and distinguished himself so much that he was raised to the rank of field-marshal, and inspector-general of the cavalry. In the war of 1741, he obtained the confidence of marshal Saxe, by the passage of the Maine at Seligenstadt, his conduct at the battle of Fontenoy, and the sieges of Mons and Charleroi. In 1756, he received the baton of marshal of France, and appeared in Germany at the head of 100,000 men. His audience with Louis XIV. closed with these words:—"By the 1st July, I shall have driven the enemy beyond the Weser, and shall be preparing to enter Hanover." He kept his word, and gained a decisive victory over the duke of Cumberland at Hastenbeck. The Hanoverians were driven from the field, and the marshal was recalled by court intrigues, and succeeded by Richelieu. After the defeat at Minden, he was sent to Giesen, where he assumed no command, but was content to assist Contades with his advice. At the close of the war, he was created Duke. He died 1771, without issue. He merited his dignities by his services, and was not less esteemed as a citizen than as a soldier.

ESTREMADURA; the name of a Spanish and a Portuguese province. The Spanish province of Estremadura is bounded N. by Leon and Old Castile, E. by New Castile, S. by Andalusa, and W. by Portugal, of which province it formerly made part of Portugal, but, being separated from that country, it is sometimes called Estremadura de Castile. The country is mountainous, and the air in summer is exceedingly hot, wholesome to the natives, but insupportable to strangers. Spring water is scarce, and the inhabitants are compelled to use principally the water of ponds. The soil is fertile in grain, grapes, and other fruits. Cattle and fine wool constitute their principal commerce. The principal towns are Badajoz, Merida, Trujillo, Xerez de los Caballeros, Elberon, Coria, and Placentia. Population in 1797, 428,393. Square miles, 14,478. The province of Portugal is bounded N. by the province of Beira, E. and S. by Alentejo, and W. by the ocean. Its mean length, from north to south, is 124 miles; its width seventy-seven miles.
The Tagus divides it into two nearly equal parts. The northern part is mountainous. It contains some mineral springs. Earthquakes are more frequent here than in any other part of Portugal. The soil in general is barren, but in the south sandy. Agriculture is so neglected, that the production hardly suffices for the consumption. Cattle abound in the mountains, fish in the rivers, and metals in the earth; but industry is wanting. The population is about 700,500, and is less active than that of the northern provinces.

ETANIA, in the Basque language, signifies dwelling, and is the origin of the terminations of Lusitania, Aquitania, &c.

ETCHING; one species of engraving on copper, the lines being corroded in with aqua fortis, instead of being cut with a graver, which, for many purposes, is superior to engraving; but there are others in which the subjects must be gravely, not etched. In general, in engravings on copper executed in the stroke manner, etching and gravings are combined; the plate is begun by etching and finished with the graver. Landscapes, architecture, and machinery require this combined process. In portraits and historical designs, the draperies and darker parts of skin are first etched, and afterwards finished with the graver. For an account of the process of etching, see Engraving.

ETHEOELIES and POLYNICES; sons of Cepheus and Jocasta. After their father's banishment, A.C. 1239, they agreed to rule in Thebes, each a year alternately. Etheoeles violated this compact, and Polynices fled to implore the assistance of Adrastus, king of Argos, who marched against Thebes, with Polynices and six other Grecian princes. The city made an obstinate defence. The two brothers fell by each other's hand; and Creon, their uncle, ascended the throne of Thebes. He prohibited the interment of Polynices, under penalty of death; but Antigone, sister of the deceased, yielding to the voice of nature, resolved to perform this last rite for her deceased brother. She was discovered, and buried alive by the order of Creon. This act of cruelty recoiled on himself; for his son, Haemon, who was in love with her, killed himself on her grave. See Thebes.

ETHELBERT, king of Kent, succeeded his father, Hermeric, about 590, and soon reduced all the states, except Northumberland, to the condition of his dukedom. He is said to have introduced Christianity into England. Ethelbert married Bertha, the daughter of Caribert, king of Paris, and a Christian princess, who, stipulating for the free exercise of her religion, brought over with her a French bishop. Her conduct was so exemplary as to possess the king and his court in favour of the Christian religion. In consequence, pope Gregory the Great sent a mission of forty monks, headed by Augustin, to preach the gospel in the island. They were well received, and numbers were converted; and the king himself, at length, submitted to be baptized. Civilization and knowledge followed Christianity, and Ethelbert enacted a body of laws, which was the first written code promulgated by the northern conquerors. He died in 616, and was succeeded by his son Edwald.

ETHELBER, king of England, son of Ethelwolf, succeeded to the government of the eastern side of the island, about 857, and in 861, in the height of his brother Ethelbald, became sole king. His reign was much disturbed by the inroads of the Danes, whom he repulsed with vigour, but without success, as, whenever they were driven from one part of the country, they ravaged another. He died in 866.

ETHELRED II., king of England, son of Ethelwolf, succeeded his brother Ethelbert in 866. The Danes became so formidable, in his reign, as to threaten the conquest of the whole kingdom. Assisted by his brother Alfred, Ethelred drove them from the centre of Mercia, where they had penetrated; but, the Mercian king being absent, he was obliged to trust to the West Saxons alone, his hereditary subjects. After various successes, the invaders continued increasing in numbers, Ethelred died, in consequence of a wound received in an action with them, in 871.

PROVINCIAL ETHELRED II., king of England, son of Edgar, succeeded his brother, Edward the Martyr, in 978, and, for his want of vigour and capacity, was surmised the Unready. During his reign, the Danes, who had for some time ceased their inroads, renewed them with great fury. After having repeatedly obtained their departure by presents of money, he effectuated, in 1002, a massacre of all the Danes in England. Much revenge only rendered his enemies more violent; and, in 1003, Sweyn and his Danes carried fire and sword through the country. They were again bribed to depart; but, upon a new invasion, Sweyn obliged the nobles to swear allegiance to him as king. Ethelred was succeeded by his son Alfred, where he staid a year, and, on his return, found Athelstan dead, and succeeded by his next son, Ethelwald, who had entered into a conspiracy with some nobles, to prevent his father from again ascending his throne. To avoid a civil war, the king gave up the western division of the kingdom to his son, and soon after, summoning the states of the whole kingdom, solemnly conferred upon the clergy the tithes of all the produce of the lands. He survived this grant about two years, dying in 857.

ETHIR; a very volatile fluid, produced by the distillation of sulphuric acid when it was an acid. The others are a very important class of compounds, differing in their qualities according as they are produced by the different acids; but they also agree in the possession of certain general properties. They are highly volatile, odorous, pungent, and inflammable; miscible with water, and capable of combining with alcohol in every proportion. They receive their names from the acids by whose action on alcohol they are produced; as sulphuric ether, nitric ether, muriatic ether, &c. (for a particular account of which, see the respective articles under these denominations).

ETHER, in philosophy. See Ether.

ETHERIDGE, Sir George, one of the wits of Charles the 11th's, day, chiefly known as a writer of comedy, was born about 1630. He is supposed to have been for some time at Cambridge, then to have travelled, and, on his return, to have been entered at one of the inns of court. He appears, however, to have written nothing but gay pursuits. In 1664, he presented to the town his first comedy, entitled the Comical Revenge, or Love in a Tub; which, although written with a very incongruous mixture of prose and verse, as suited the taste of the times, was well received. The author was immediately enrolled among the courtly wits of the day, and, in 1668, brought out his
next piece, entitled She Would if She Could, which was very coarse and licentious. In 1676, he produced his third and last comedy, entitled The Man of the Mountain, or Fopling Flutter, in which time he was, as the dedicatory verses, in the service of Mary of Modena, the second duchess of York. This performance was still more applauded than the preceding, and the Sir Fopling was, for a long time, deemed the ideal of the superlative beau or coxcomb of the age. Dorimant was intended to represent its rakish fine-gentleman. Etherege's plays are little more than lively conversation pieces, with a great paucity of genuine humour or felicitous plot, and have long been placed on the manager's shelf. His future career was very much in character. Having injured his constitution and fortune, he sought to marry a rich elderly widow, who made his acquirement of the honour of knighthood the condition of her acceptance. This, on the accession of James II., he attained, and was appointed envoy to Ratisbon, whence he wrote two very pleasant letters to the duke of Buckingham, which are printed in the Biographia Britannica. On the occasion, he is said to have joined his former master in France. He was courly and companionable, sprightly and generous, but deemed a little too much of his own Sir Fopling. Besides his plays, he wrote much light and easy poetry, such as songs, lampoons, panegyrics, &c., which are not without the merit usually belonging to "the mob of gentlemen who write with ease."

ETHIOPIANS, an indefinite term in ancient times, was used to signify all people of a dark or black skin, as well in Asia as Africa. Homer, who calls them the blameless, therefore places the Ethiopians both in the east and the west. Afterwards, the inhabitants of Abyssinia were called by this name, Abyssinia being, or imitated Ethiopia. The Ethiopian women, who are frequently sold as slaves in Constantinople, are celebrated for their fine forms. See Negroes.

ETHIOPS MINERAL. See Mercury.

ETHNOGRAPHY (from the Greek ἔθος, nation, and γράφειν, I write); a term used by the Germans and French to signify the description of nations. It describes the customs, religion, &c., in fact, everything which is characteristic of a nation. The importance of this department of knowledge, and the progress which has been made in it since travel has so much increased, and the prejudice of travellers so much diminished, is evident. Ethnography; belonging to the science just described, and also the history of nations. A history, for example, is either chronological, when events are recounted in the order of time, or ethnographical, when the history of an individual people is given by itself. See History.

ETIENNE; famous printers of this name. See Stephens.

ETIQUETTE (French; a ticket); primarily an account of ceremonies; hence, in present usage, forms of ceremony or decorum; the forms which are observed towards particular persons in particular places, especially in courts and on public occasions. From the original sense of the word, it may be inferred, that it was formerly the custom to deliver cards containing orders for regulating the ceremonies on public occasions. Those countries in which etiquette among the higher orders has been most rigidly enforced, are those which have been clothed in this artificial splendour, and external honour paid to the great, have, in general, been more anxiously exacted by them in proportion as real respect was wanting. When the Roman emperors surrounded themselves with imposing ceremonies, they had long ceased to be the masters of the world; and the imperial court at Byzantium was never more observant of trifling and empty forms, than when the provinces were in insurrection, and the barbarians swarmed under the walls of the capital. Philip the Good, duke of Burgundy, who, in vanity compelled himself to put himself on a level with his sovereign, is the father, as it were, of the modern system of etiquette, which has been introduced since his time, with more or less strictness, into many courts of Europe. To make himself equal, in the eyes of the world, to the first prince in Christendom, and unhappy, he swarmed with a multitude of retainers and courtiers, and prescribed to them an etiquette so formal and minute, that the Spanish court alone (so lively and gay in the time of the Moors) surpasses it in strictness. At the present day, the great diffusion of knowledge and education, by which all classes are brought into closer contact; the general democratic tendency of the age; the free and active intercourse between nations—all have contributed much to diminish the strictness of etiquette. Probably, no nation has carried etiquette to a greater degree of nicety and absurd formality than the Chinese.

ETOLO; or, Edola. See Etolians.

ETON; a village in England, in Bucks, separated from Windsor by the river Thames, over which is a bridge; twenty-two miles N. W. London; population in 1851, 3239. It is celebrated for its royal college, which was founded in the nineteenth year of Henry VI., in 1440, contains seventy four scholars, from 300 to 350 independent scholars, ten choristers, besides inferior officers, &c., of the college. The late provost of the college, Dr Goodall, commenced a portrait gallery, consisting of noblemen and distinguished individuals who have been educated at this school. This collection is already enriched by portraits, painted by some of the best modern artists. The college library is large. The revenue of the college amounts to about £6000 a-year. Porson, and other distinguished men, were educated at this institution. Gray's ode to Eton college is probably fresh in the minds of our readers.

The Eton Mutem is one of the many odd and curious customs in England. It takes place on Whit-Tuesday every third year. The scholars of the college march in procession to Salt-hill, where their captain, the best scholar, recites a passage from some ancient author. The young gentlemen, called white bearers, and arrayed in white dresses, then disperse in various directions, to collect money from all passers-by, not allowing any one to pass without giving something. The money thus collected, which usually amounts to several hundred pounds, is given to the captain, to enable him to take up his residence at one of the universities. The royal family and a splendid company generally attend the ceremony.

ETURIA. This beautiful region, bounded west by the Mediterranean, east by the Apennines, north by the river Magra, and south by the Tiber, is the country of the ingenious Etruscans, who have arisen from beneath the ruins of the remotest antiquity in the history of modern art, and in the archeological investigations of our time. The chief river of the country was the Arno (Arno). This country, which corresponds nearly with the present Tuscany, was very early a confederation, under the rulers of the twelve principal cities, each of which possessed a republic or municipality; namely, Pisa, Pistoia, Pistoia, Florentia, Faenza, Volaterra (Volterra), Volosini (Bolsena), Clusium (Chiusi), Areutium (Ar- rezzo), Cortona, Perusa (Perugia), Falerii (Falerii), and the rich city of Veii. The chiefs of these republics were styled lautomneri, who were also the priests and generals, and held their meetings in the
temple of Volturna, where they deliberated together on the general affairs of the country. Porsea
n
Etruria was at the height of its glory at the time of the building of Rome, and served for a model to the
new govern. It was occupied only by the Greeks in their highest splendour, the Etruscans excelled in
architecture, ship-building, medicine, the art of making
arms, and fortifications, building dykes, and in
tactics; they were distinguished particularly for
their ingenuity and skill in the construction of all
arts connected with their mode of life. They carried on
a considerable commerce in Italy and Greece with their
works of art, and founded many important colonies.
Their commercial intercourse with the
Greeks soon made them their rivals in refinement.
The progress made by the Etruscans of that age in
painting and the plastic arts is peculiarly interesting

to archæologists, as the study of their remains (sculp-
tured gems, sarcophagi, vases, &c,) leads to
the explanation of their mythology. (See Inghirami
Monum. Etruschi, Fiesole, 1826, 6 vols. 4to, more
accurate than Gori’s Museum Etruscanum.) They are
surprised to find how beautiful and noble in taste,
which had in itself sufficient charms to create a new
epoch in modern taste, from Greece and Egypt, but
on this point there is much difference of opinion.
What are called the Etruscan vases, with their
peculiar bass-reliefs and paintings, have been care-
fully examined by Millin, and in Boettiger’s Treatise
on Pictured Vases.

In Plate XXXVI., the reader will find eight rep-
resentations of Ancient Vases, usually denominated
Etruscan vases. See the article Vase.

Fig. 1. represents a very large vase, being two
feet three inches in height. The neck represents the
hunting of a stag, in which five figures are engaged,
two of whom run it through with spears. The man-
er of their hunting is remarkable; each of the two
figures immediately engaged has a pallium extended,
as if to cheat the animal, and lead it to aim its blows
in the wrong direction. On the body of the vase is a lat-
tle, wherein one man, armed with a crested helmet
and cuirass, his only weapon being a sword, fights
against two who attack him with lances. Behind the
single combatant advances Victory, holding a laurel
bough in her hand for the conqueror; her head is
covered by a hat closely resembling that of the
modern ex-archers. Etruscan bow and arrows are here
before. This form of hat appears elsewhere on the
vase, on one of the combatants, and also flying
off the heads of the hunters, in the speed of their run-
ing. It is most likely that this head-dress was
what the ancients called exubetum, Umbella, (Um-
brillo), Albericus, in his Images of the Gods, speak-
ing of Mercury’s Petasus, which is very similar, calls
it Galerus seu Umbella.

On fig. 2 we see the Egyptian symbol of the cross,
which is very rare on Etruscan works.

Fig. 3. represents a goblet of a description fre-
quently used by the Etruscans. It has no means of
standing, but terminates in the head of an ox.
Round the goblet is a running figure, holding in one
hand a dish filled with apples, and in the other a
bucket.

Fig. 4. is a vase of a fine full form, with short
handles of swans’ heads; the sides covered with a pic-
turesque landscape. On one of the horns of a

The heads of the vases exhibits, on the upper part, Cupid addressing
his mother Venus, in the lower two figures, that appear to be husband and wife, beside whom
stands a tall personage, dressed in a very peculiar
manner; round his neck is something like a ruff; his
head-dress terminates in points, and in his hand
is a long pike or sceptre, on the top of which is a
bird like an eagle. He may be the king, or perhaps
he is inspired; the size of the engraving is not
competent to render the particulars of his dress.

Fig. 5. is a very extraordinary description of a
vase, two different stories being represented, a divi-
dion between them being formed by a river, or more
properly the sea, if we may judge from the strange
figures of the sea-demons. The principal event is
the sacrifice of a bull; a priestess places a chaplet
on its head, and fastens it on the horns. Below are
two winged figures, one of them flying; between
them is seated a woman; each of the three figures
have chaplets in their hands.

In Fig. 6. are represented Bacchantes. The male
holds a cup in his hand, and the female an instru-
ment which resembles a cymbal; between them
stands an altar, over which, at some distance, is an
instrument with three raised points.

Fig. 7. is a bowl having a lid upon it; the handles
are remarkable for the beauty of their design.
The remaining fig. 8. has nothing very particular
about it; the reason of its choice having been its
variety from the others. The figures on the side are
Bacchus and his train.

The Etruscan painters were unequaled with the
mixture of colours, and the distribution of light
and shade; their common colours were black and
brownish red. Theatrical entertainments, music and
poetry, were not unknown to them. Before they
had reached that degree of refinement to which the
Greeks had arrived, this people and their arts sunk
together under the political storms of the age, partly
through internal dissensions, and partly by the op-
pression of foreign nations. The Romans received
their religious usages, their primitive architecture,
&c, from the Etruscans.

At the end of their most flourishing period, the
Gauls drove them from their settlements in Upper
Italy, and some of them fled to the Alps; from
whom the Rhaetians derived their origin. They
finally became the victims of Roman ambition. The
Romans sent them governors, but allowed them
to retain their own manners and laws, the choice of
their consuls, and, in general, a reasonable degree
of freedom. They were expelled from the coast
region, and fell, with Rome, under the power of foreign conquerors.

From this time the history of Etruria, or Tuscany, as it has
since been called, has become interwoven with that
of Italy and Germany. Tuscans and Etruscans,
however, were names as foreign to the people as
Tyrrhenians. They called themselves Etrusci. The
ancient Latin term was Etruria for the country,
Tusci for the people. Etruscans did not come into
use till after Cato’s time. Under the later em-
perors, the country was called Tuscia; hence Tuscana
in the middle ages.

The origin of the Etruscans is extremely doubtful.
Ancient writers, misconstruing early traditions, rep-
resented them as descendants of the Greeks—an
opinion which was long received. Niebuhr, how
ever, thinks there is no foundation for this opinion,
and, from many circumstances, ingeniously attempts
to prove that they originated from the northern moun-
tains, the Alps; and his views were confirmed by the
learned disquisition on this point in his History of Rome, division Tuscia and Etruscans. The discov-
ery of a great number of vases, in 1830, on the
estate of the prince of Canino, not far from the
north-western coast of Italy, nearly opposite Elba,
seems to corroborate this opinion. Besides the vases
which contained Greek inscriptions; and which are

ETRURIA. 103
ETTENHEIM—ETYMOLOGY.

considered by many to be of an age when Greece was still in a state of semi-barbarism, many ornaments of gold, with engraved gems, and a superb fawn, considered by Thorwaldsen as a most perfect piece of art, have been dug up. If it is true that Greece received from the Etruscans, as it is an interesting question how Egyptian civilization was first brought to the Etruscans. See Tuscany.

By the peace of Luneville, 1801, the name Etruria was restored, and the territory was constituted a kingdom, under the hereditary prince of Parma, Lord Charles, son of Ferdinand I, duke of Parma. After the death of Louis (1803), his widow Maria Louisa, daughter of Charles IV., king of Spain, administered the government as guardian of her son, Charles Louis; but she resigned her authority, December 10, 1807, in consequence of a treaty between France and Spain. Etruria now became a French province; and a decree of the senate of May 30, 1808, declared the states of Tuscany, under the title of the departments of the Arno, the Mediterranean, and the Ombrone, a part of the French empire (the grand empire). In 1809, this territory was given to Eliza, sister of Napoleon, with the title of queen of the Etrurians. In 1814, Tuscany again received its former rulers.

ETTENHEIM; a small town in the grand-duchy of Baden, nineteen miles S. S. E. Strasburg, with 2680 inhabitants. The duke of Enghien was arrested here.

ETTRICK, a mountainous parish of Scotland, in Selkirkshire, extending about ten miles in every direction. It is almost entirely a pastoral district. The river Ettrick takes its rise in the parish, and after a winding course of thirty miles, falls into the Tweed, three miles above Melrose. It receives the Yarrow stream near Philiphaugh, one and a half mile above Selkirk. There are two lochs, partly in this parish, and partly in the parish of Yarrow,—the Loch of the Lows, and St Mary's Loch, both abounding with pike and tench perch. Anciently the district was covered with wood, and though now demuded of trees, it is still called Ettrick Forest. Population of the parish in 1831, 589.

ETYMO—ETYMOLOGY. (From ΕΤΥΜΟΣ, a word; το, the idea; ΟΛΟΣ, general; ίγι, from ΕΓΙ, true, real, and ΡΟΑ, word; that branch of philology which teaches the origin of words, traces the laws by which the changes in languages take place, and discovers the true meanings of words by examining their roots and composition. It is at once the delicia philologica, and a safeguard against the corruption of language by a continual accession to them. Etymology becomes particularly interesting when applied to those languages which are not so much the product of accident as of settled laws, which continue to operate as long as the language exists. Etymology has not unfrequently led to important historical conjectures, because the language of a tribe is often the only record of its descent, the individuals composing it having lost all tradition of their origin. Who can doubt the importance of etymology, taking it in its widest sense, as treating of the origin and nature of words, and of the connections of different languages; in short, as occupied with the laws which regulate the formation of languages, which stand pre-eminent among the most interesting, important, and noble productions of the human mind? To be a sound etymologist, requires many rare qualifications, among which are a thorough knowledge of many and very different languages; a great attention will be necessary to appearances; a philosophical mind, which easily conceives the associations of ideas, and traces the different, yet connected notions which the same root expresses in different languages; in one language representing, perhaps, the most concrete, and in another the most abstract idea; a perfect knowledge of phonology, or the science of human sounds, and the organs which produce them, and a natural taste and adaptation for the study, which, like every gift of nature, may be much developed, but cannot be produced by artificial means. Etymology is a study with much zeal and success in our day, as illustrative both of single languages (how much, for instance, has Buttman done for Greek etymology), and of the relations between whole families of languages. Modern scholars have been assisted in their researches in this department, by the discovery of those languages which former ages have accumulated, but by the great advancement which has been made in the knowledge of languages before unknown, owing to the more frequent and rapid communication between the most distant parts of the globe, to materials collected by missionaries, &c. In general, it may be said that the Germans have done more for etymology than any other nation; while, comparatively speaking, very little has been done by the English, whom almost every word in their language conducts into a foreign country, and with whom it might be supposed etymology would be much more generally cultivated than with the French, who are the German's neighbours. When a language forms a whole in itself, the words of which explain each other as far as common use requires.

Etymology might be divided into the higher and lower, as we have the higher and lower mathematics, and it might, perhaps, be correct to say, that higher etymology examines the origin of the root of a certain word, its connexions with corresponding words in other languages, &c., and that it treats only of the higher laws of the formation of languages; but, of course, the line of distinction between these two divisions cannot be very accurately drawn. As an instance of our meaning, let us trace the origin of the word disgracefulness; nesc is an affix frequently in substantives, corresponding to the German niss, and indicating a state, effect, or abstraction; a syllable which is to be found in some shape or other in all Teutonic dialects; dis (the Latin dias, asunder), a prefix often of the same meaning as the English un, conveying the idea of a negation; agreeable, from the French agréable, of which able is an adjectival affix from the Latin; a, a preposition often indicating at, as a plaisir, at pleasure; gré, at last, is the root of the word, analogous to grat, the root of the Latin gratus, and having the same meaning. Higher etymology now continues to trace the root of gratus in several other languages, to languages that were not spoken, and it is probable that it would be found that g is an augment which, in several other languages, is left out. (See the article F.) To find the root of a word is always the first object of etymology, but often difficult, because several different syllables may sometimes present themselves as probable roots. Etymology must be always taken into the account, and letters which are added merely for the sake of improving the sound must be thrown aside. As another instance, we may take the word lawless; this consists of a substantive, law, and a syllable, less, corresponding to the German syllable, dess, which is used as a prefix, and has then the meaning of off: it is the root of lassen, to loosen, to separate, connected, probably, with the Latin lascare and lucere, the Greek λάσιω, λασίω, λασων; and the same with the Swedish los, the Icelandic leita, and the Anglo-Saxon lecan and lygan. Law is the root which we require, in the adverb, and has then the meaning of off; it is the root of losoun, to loosen, to separate, connected, probably, with the Latin lascare and lucere, the Greek λάσιω, λασίω, λασων; and the same with the Swedish los, the Icelandic leita, and the Anglo-Saxon lecan and lygan. Law is the root which we require, in the adverb, and has then the meaning of off; it is the root of losoun, to loosen, to separate, connected, probably, with the Latin lascare and lucere, the Greek λάσιω, λασίω, λασων; and the same with the Swedish los, the Icelandic leita, and the Anglo-Saxon lecan and lygan. Law is the root which we require, in the adverb, and has then the meaning of off; it is the root of losoun, to loosen, to separate, connected, probably, with the Latin lascare and lucere, the Greek λάσιω, λασίω, λασων; and the same with the Swedish los, the Icelandic leita, and the Anglo-Saxon lecan and lygan.
Icelandic leggja, the Swedish legga, the Greek λεγγα. Law is also connected with the Latin lege and legis. The latter probably comes from the Latin lex, as the inhabitants of Gaul received laws in a very complete state from the Romans before the Franks conquered Gaul, and from the truncated genitive legis, leg and legis can easily have originated. It is to be remarked that derived languages, as the Italian legge, very rarely form their substantives from the genitives of the original language; as the Italian Giove of Jove.

EUBEA. See Nérgropont.

EUCHARIST (from the Greek εὐχαρίστια, thanksgiving; from εὐχαρίστος, grace) the name for the Lord's Supper became the English thanksgiving. Christ, after having taken the wine and bread, blessed them (or gave thanks). See SACRAMENT, and Corpus Christi.

EUCHLORINE. See Chlorine.

EUCLID, called the father of mathematics, was born at Alexandria in Egypt, about 300 B.C., studied at Athens, under Plato, taught geometry at Alexandria in the reign of Ptolemy Soter, and extended the boundaries of mathematical science. The severity and accuracy of his method has never been surpassed. The most profound of his works is that which treats of geometrical magnitudes. His electric researches are the subject of one of the best editions by Gregory, Oxford, 1703, fol. His writings on music give us the best idea of the state of that art among the Greeks. His work on geometrical analysis displays his acuteness to the greatest advantage.

2. Euclid of Megara was the founder of the Megaric school. Although Megara is at a considerable distance from Athens, and its inhabitants were forbidden, under penalty of death, to enter the Athenian territories, he used to go to the city in disguise, in the evening, to enjoy the instruction of Socrates, and return at daybreak. He afterwards deviated from the simple system of his teacher, and changed his plain irony into the most subtle disputation. With the Eleatics, he maintained that there was but one being in the universe; and this being he called the true and good. For its subtlety and disputativeness his school was also called the Eristic school. He lived at B.C. 450. Enheduena was one of his pupils.

EUDEMISM, EUDEMONOLOGY; the doctrine of happiness, or that system which makes human happiness its prime object, the highest motive of every duty, and of a virtuous life, and consequently the whole foundation of morals. Eudemonism is confounded with that morality or pure system of philosophy, which makes virtue itself the chief object, independent of its tendency to promote human happiness.

Eudemonist; one who supports the doctrine of Eudemonism.

EUDEXIOMETER; an instrument for ascertaining the purity of air, or, rather, the quantity of oxygen contained in any given bulk of elastic fluid. Dr Priestley's discovery of the great readiness with which nitrous gas combines with oxygen, and is precipitated in the form of nitric acid, was the basis upon which he constructed the first instrument of this kind. It consisted of a glass vessel, containing an ounce by measure. This was filled with the air to be examined, which was transferred from it to a jar, of an inch and a half diameter in water; an equal measure of fresh nitrous gas was added to it, and the mixture was allowed to stand two minutes. If the absorption were very considerable, more nitrous gas was added, till all the oxygen appeared to be absorbed. The residual gas was then transferred into a glass tube, two feet long and one-third of an inch wide, graduated to tenths and hundredths of an ounce measure; and thus the quantity of oxygen absorbed was measured by the diminution that had taken place. Other geometrical methods were employed by other chemists. Volta had recourse to the detonation of air with hydrogen gas. For this purpose, two measures of hydrogen gas are introduced into a graduated tube, with three of the air to be examined, and fired by the electric spark. As the gas is ignited, and the vessel, after the vessel had returned to its original temperature, divided by three, gives the quantity of oxygen consumed. The action of liquid prepared from sulphur and potash, or sulphur and lime, boiled in water, and the slow combustion of phosphorus, leaves, likewise been employed in the determination of oxygen. Dobereiner has suggested the use of little balls of spongy platinum, for the purpose of detecting minute portions of oxygen in a gaseous mixture, in which hydrogen is also present. Its effect is immediate and complete. The moment the substance rises above the surface of the mercury, in the tube containing the mixture, the combination of the oxygen and hydrogen begins, and in a few minutes is completed. So energetic is it in its action, that it enables hydrogen to take one of oxygen from ninety-nine of nitrogen—a result which it is impossible to obtain by electricity.

EUGERGETÆ (benefactores). This name was given to a small nation, called Agriaspis or Arinapii, in the Persian province of Drangiana, because they saved the elder Cyrus with his army in the desert, when in great distress for want of provisions. This little tribe had a good form of government, entirely different from that of the surrounding barbarians. Alexander, therefore, not only left them their constitution and liberties entire, but also granted them, at their request, some territories in their vicinity. Some princes have borne this name, e.g., the Polomies.

EUGENE, FRANCIS, of Savoy, known as prince Eugene, fifth son of Eugene Maurice, duke of Savoy-Carignan, count of Soissons, and Olympia Mancini, a niece of cardinal Mazarin, was born at Paris, 1693. Among all the generals and statesmen of Austria, none has rendered more numerous and important services than Eugene. He was great alike in the field and the cabinet. In the field, in all the important victories, Eugene was destined for the church. He petioned Louis XIV. for a company of dragoons, but was refused on account of the opposition of Louvois, minister of war, who hated the family of Eugene. Indignant at this repulse, and at the insults offered to his family, and particularly to his father Eugene, in 1683, entered the Austrian service, as two of his brothers had already done. He served his first campaign as a volunteer against the Turks, under two celebrated generals, Charles, duke of Lorraine, and Louis, prince of Baden, with so much distinction that he received a regiment of dragoons. Louvois, jealous of the reputation of Eugene, said angrily, "He shall never return to his country," Eugene, to whom these words were reported, replied, "I shall return in spite of Louvois;" and, in fact, some years afterwards, he entered France at the head of a victorious army. In 1687, after the battle of Malma, he was made lieutenant field-marshall. War having broken out between France and Austria, he prevailed upon the duke of Savoy to enter into an alliance with the emperor, and commanded the imperial forces sent for the defence of Savoy. He rejected the tempting offers made by France to engage him in her service, and was raised by the emperor to the rank of general-field-marshal. After the war in Italy was concluded, he was sent to Hungary with the rank of commander-in-chief. He defeated the Turks at the battle of Zenta (September 11, 1697), and, obtained, on
occasion, the applause of Europe, and the entire con-

EUGENE DE BEAUVARNAIS.

fidence of the imperial armies, although his enemies, envious of his glory, accused him of temerity, in 

and, but ami

ral to plaquet, fonght him and enough." The loss of the Turks at Zenta obliged them to accede to the 

peace of Carlowitz, 1699, which was the first symp-

tom of their decline.

The Spanish war of succession next called Eugene to a new theatre of glory. Italy became the field in 

which he displayed his military talent, when he adva- 

tially and rapidly through the passes of the Tyrol, at the head of 30,000 men, in the face of marshal Catzinat, who 

ever endeavoured in vain to arrest his progress. Villereol 

was still more unsuccessful, being surprised and de-

feated, near Cremoia, by Eugene. In 1703, he 

commanded the army in Germany; and, 

being appointed president of the council of war, he 

was the soul of all important enterprises, to which he imparted great activity; and his efficient co-

operation with Marlborough frustrated the plans of 

France and her allies. In the battle of Hochstadt 

(Blesheim, see Bleisheim), August 13, 1704, the two 

hearts met a decisive victory over the French and 

Bavarian army, commanded by the prince of Bavaria 

and marshal Tallard, the latter of whom was made 

prisoner. In 1705, Eugene returned to Italy, where 

he was severely wounded in an engagement with the 

French under the duke de Vendome, and being 

obliged not to rest from the field, his army was de-

feated; but Vendome was recalled, and his successor, 

the duke de la Feuillade, could not withstand 

Eugene, who now hastened to the relief of Turin, 

stormed the French lines, forced them to raise the 

siege, and in one month drove them out of Italy. In 

1707, he entered France, and laid siege to Toulon; 

but the immense superiority of the enemy obliged 

him to retire into Italy. The following years he 

fought on the Rhine, took Lille, and defeated the 

marshals Villars and Bouflers at the battle of Mal-

plaquet, where he himself was dangerously wounded. 

In this situation, he maintained that calmness pecu-

lir to great souls: when the officers urged upon 

him the necessity of providing for his personal safety, 

"What need of bandages," said he, "if we are about 

to die here? If we escape, the evening will be 

time enough."

After the recall of Marlborough, which Eugene 

opposed in person, at London, without success, and 

the dissolution of the alliance between France, his farther progress was in a great measure 

checked, more particularly after the defeat of gener-

al Alenmarle at Denain. The peace of Rastadt, 

the consequence of the treaty of Utrecit, was con-

cluded between Eugene and Villars in 1714. In the 

war with Turkey, in 1716, Eugene defeated two 

superior armies at Peterwardin and Ternesvar, and, 

in 1717, took Belgrade, after having gained a de-

cise victory over a third army that came to its relief. 

The treaty of Passarovia was the result of this suc-

cess. During fifteen years which followed, Austria 

enjoyed peace, and Eugene was as active in the 

countryside as he had been in the field, when the Polish 

affairs, in 1733, became the source of a new war. 

Eugene appeared, in his old age, at the head of an 

army, on the banks of the Rhine, but returned to 

Vienna, without effecting anything of importance. 

He died in 1736, at the age of seventy-two. The 

Austrian department of war, to which he imparted 

such honor, was now deprived of his presence, relapsed, after 

tis death, into its former imbecility.

EUGENE DE BEAUVARNAIS, duke of Leuch-

tenberg, prince of Eichstedt, ex-viceroy of Italy, was 

born September 3, 1781. He was the son of the 

viscount Alexander Beauharnais, who was guillo-

tined 1794, and Josephine Tascher de la Pagerie,

afterwards wife of Napoleon and empress of France. 

During the French revolution, Eugene entered the 

military service, and, at the age of twelve years, ac-

accompanied his father in the campaigns against the 

army of the Rhine. After his father's death, he 

joined Hoche, in La Vendee, where his mother was in 

prison. After the 9th Thermidor, he returned to his 

mother at Paris, and remained three years devoted 

to study. In 1796, Josephine was married to general 

Bonaparte, who, detached from the French army of 

Italy; and Eugene accompanied his father-in-law in 

his campaigns in Italy and Egypt. He was pro-

moted to a high rank in the service, and, in 1805, 

created a prince of France and viceroy of Italy. In 

the same year, he distinguished himself in the cam-

paigns against Austria, and, after the peace of 

January 13, 1806, married the princess Augusta of 

Bavaria. In 1807, Napoleon made him prince of 

Venice, and declared him his heir to the kingdom of 

Italy. He administered the government of Italy 

with great prudence and moderation, and was much 

beloved by his subjects. In the war of 1809, he 

was at first successful, but the Austrians and his 

congregated forces gained the battle of Blorbas, 

but soon afterwards gained the battle of Raab, and 
distinguished himself at Wagram. He conducted 

himself with great prudence on the occasion of the 

divorce of Napoleon from his mother. The 5d of 

March, 1810, Napoleon appointed him successor of 

the prince Eugene, who had been created grand-

duke of Frankfort.

In the Russian campaign, he commanded the third 
corps d'armée, and distinguished himself in the battles 
of Ostrowno, Mohilo, and that on the Moskwa (Boro-
dino). In the disastrous retreat, he did not desert 

the wrecks of his division for a moment, but shared 

its toils and dangers with the soldiers, and encaged 

them by his example. To him and to Ney, France 

was indebted for the preservation of the remains of 

her army during that fatal retreat. On the departure 

of Napoleon and Murat, he was left in the chief 

command, and showed great talent at that dangerous 

confrontation. We find him again at the battle of 

Lutzen, on May 2, 1813, where, by surrounding the 

right wing of the enemy, he decided the fate of the 

day. Napoleon sent him from Dresden to the defence 

of Italy, now menaced by the enemy's forces, where 

military operations commenced after the dissolu-

tion of the congress of Prague, and the accession of 

Austria to the throne of the allied powers. Eugene 

maintained the defence of Italy even after the deser-

ction of Murat.

After the fall of Napoleon, he concluded an armis-
tice with count Bellegarde, by which he delivered 

Lombardy, and all Upper Italy, to the Austrians. 

Eugene then went immediately to Paris, and thence 

to his father-in-law at Munich. He was at the con-

gress of Vienna. On the return of Napoleon from 

Elba, he was obliged to leave Vienna, and retire to 

Baireuti. He was an inactive spectator of the events 

in 1815. By the articles of Fontainebleau, an in-

demnification was assigned him for the loss of his 
estates in Italy, with the exception of the first three 

million of francs; but the congress of Vienna, confirmed 

his dotation in the march of Ancona, and the king 

of Naples was obliged to pay him five million 

francs. By an ordinance of the king of Bavaria, 

he was created duke of Leuchtenberg, November, 

1817. The Bavarian princes passed to Eugene 

his present title, and his posterity declared capable 

of inheriting in case of the failure of the Bavarian 

line. He died at Munich, Feb. 21, 1824, leaving 

two sons and four daughters.

Prince Eugene, under a simple exterior, concealed 

a noble character, and great talents. Honour, inte-

grity, humanity, and love of order and justice, were
EULENSPIEGEL.—EULER. 107

the principal traits of his character. Wise in the council, unflawed in the field, and moderate in the exercise of power, he never appeared greater than in the midst of reverses; as the events of 1813–1814 prove. He was accessible to the spirit of party, benevolent and beneficent, and more devoted to the good of others than his own. He died of an organic disorder of the brain. (See Fie politico et militaire d' Eugène Beauharnais, Ftie-roi d'Italie, by Aubriet, second edition, Paris, 1825.) His sister is the duchess of Saint-Leu, wife of Louis Bonaparte, former king of Holland, and separated from her husband. His son, the duke Augustus, who succeeded him, was born Oct. 10, 1810. His eldest daughter, Joséphine, was married 23d of March, 1823, to Oscar, crown-prince of Sweden, son of Charles XIV.; his second daughter, Hortensia Eugenia, was married to the prince of Holm-ollen-Hechingen, in 1826. Amelia Eugenia married the late Don Pedro, when emperor of Brazil, in 1820.

EULENSPIEGEL, TYLL, was born at Kneithingen, a village of Wolfenbuttel, not far from Schoppenstadt, and died, about 1350, in the little town of Mollen, about 15 miles from Wolfsburg. Living in poverty, he carved a granite stone, with a looking-glass (spiegel) and an owl (eule) upon it, in allusion to his name, yet stands. His name has become proverbial in Germany for all sorts of wild, whimsical frolics, which are committed from pure love of fun; for Tyll was continually engaged in such, as he roved about through Lower Saxony and Westphalia, and even as far as Poland and Rome. Accounts of them are still preserved in the popular traditions of Germany. At what time and in what language they were first committed to writing can hardly be determined. From the title of the old popular editions, it would seem to have been in Low-German, and it has been supposed, without sufficient evidence, that Thomas Murier, the Franciscan, doctor of theology and law, and an antagonist of Luther, known by his Fool's Complaint, and other writings of a similar stamp, transmuted them into High-German. Indecencies are frequently to be found in the book, but they belong to the age. It has been a favourite book, not only with the German, but many other nations, has been translated into English, French, Latin, Dutch, and Polich, has been often imitated, and has passed through editions without number. (See Reichard's Bibliothek der Romane, vols. 2 and 3; Flora, vol. 6; Fetsch's Lexikon, s. v. Wolfenbuttel; die Volksbuecher.) The earliest printed edition, as far as can be ascertained, is the High-German, Strasburg, 1519, 4to. A very rare engraving by Luke of Leyden is called the Eulenspiegel (l'Espiegle).

EULER, LEONARD, one of the most distinguished mathematicians of the last century, was born at Basel, in 1707. He learned from his father, a clergyman, the first rudiments of the science in which he was afterwards so distinguished. At the university of Basel he enjoyed the instructions of John Bernouilli, and the friendship of Daniel and Nicholas Bernouilli, who successfully emulated their father's fame. In his 19th year, he gained the access to the prize offered by the Paris academy of sciences for the best treatise on the masting of vessels. Catherine I., desirous of completing the establishment of the academy of Petersburg, invited Daniel and Nicholas Bernouilli thither. Nicholas died, and Daniel soon returned to his native Switzerland; but they procured that he should have a place in the academy for his friend Euler. Euler now constituted the whole mathematical department in the academy, and laboured with astonishing industry; he composed more than half of the treatises in this branch of science contained in the forty-six quarto volumes published by the academy from 1727 to 1785; and, at his death, left about 100 unpublished dis-

Euler received from all parts of Europe flattering marks of respect. The academy of sciences in France chose him, in 1775, one of its foreign members, though none of those places, then so much an object of ambition, was vacant. He also received considerable presents for the assistance which he rendered to Tob. Mayer (q. v.) in preparing his lunar tables, and £300 sterling, as his share of the prize offered by the British parliament for the best method of determining the longitude at sea. He distinguished himself, particularly, by his endeavours to perfect the analytic method in its applications to mechanics. He supported for a time the Leibnitzian school, and to complete its separation from pure geometry, which Newton's disciples principally employed in their investigations. He first gave the example of those long processes, in which the conditions of the problem are first expressed by algebraic symbols, and then pure calculation resolves all the difficulties. In this, Euler displayed extraordinary acuteness, and a profound as well as inventive genius. He gave a new form to the science. He applied the analytic method to mechanics, and enlarged the boundaries of this science. He greatly improved the integral and differential calculus, of which he afterwards published a complete course, which surpassed everything then extant on this subject.

His first essay, on the Masting of Vessels, and still more his residence at Petersburg, undoubtedly led him to the application of mathematics to the building and management of vessels; and he composed his Théorie courante de la Construction, et de la Manœuvre des Voix., which has been introduced into the French naval school, and translated into English, Italian, and Russian. The great questions on the system of the universe, which Newton left to his successors to resolve, were the constant object of Euler's inquiries. And the greatest part of his prize essays. An extensive didotic treatise, Sur la Perfection des Verres ob. et des Laitunes, in the Mémoires de Berlin, 1747, was the result of his inquiries into the means of improving spectacles. The share which he contributed, by this work, towards the discovery of achromatic telescopes, is sufficient to distinguish his name in this department also. But, in his treatises on physics, he often proposes untenable hypotheses, and appears only to be seeking opportunities for calculation. He also employed himself in metaphysical and philosophical speculations. He attempted to prove the immateriality of the soul, and to defend revolution against free thinkers. In his well known Lettres à une Princesse d'Allemagne, sur divers Sujets de Physique, et de Philos. (Berlin, 1763, 3 vols., since republished several times; also in German, Petersburg, 1773), he attacks the Leibnitzian system of monads, and pre-established harmony; but he procured that they should not be introduced for him to shine in. Meusel has given a catalogue of his numerous writings, which have not appeared in collections. We will only mention here his Théor. Motuw. Planetarum et Cometarum (Berlin, 1744; 4to); his Introduction à l'Analyse Infinitesimum (La-
namme, 1748, 2 vols.); his work already mentioned, which has always been regarded as his greatest pro-
EULOGIES—EUPHONIDES.

duction—Institutiones Calculi Differentialis (Berlin, 1755, 4to); his Institutiones Calculi Integralis (Petersburg, 1768,—70, 3 vols. 4to; new edition 4 vols., 1790, 8vo); and an Introduction to Algebra (ed. by Ebert, Berlin, 1801, 2 vols.); his Dioptrico (Petersburg, 1767,—71, 3 vols. 4to); his Opuscula Analytica, &c.

Euler was of an amiable character, unassuming in his manners, of a cheerful and always pleasant temper, and of the most fond of society, and had the art of enlivening it by an agreeable wit. During the last seventeen years of his life he was totally blind. By his first marriage he had thirteen children, five of whom were living when he married his second wife, his sister-in-law. Of his sons, John Albert, born at Petersburg, 1794, where he died, 1808, followed in his father's steps, was a thorough and expert mathe-
matician, and wrote many treatises, of which seven gained prizes.

EULOGIES compose, particularly in French literature, a separate branch of belles-lettres. In the age of Louis XIV. they took the place of biography. To do justice to the praise of distinguished men, truth has been often sacrificed in them to flattery. The French academy, especially, has paid this tribute to literary merit. The epoch of eulogies began with Fontenelle, who published two volumes of them, in 1731, distinguished for their clearness, vivacity, and elegance. Those which followed them were written with much oratorical pomp. Some of the best eulo-
gies are by Thomas (author of Essais sur les Eloges), D'Alenbert, La Harpe, and Condorcet.

EUENIDES. See Furies.

EUROMIA. See Hours.

EUNUCHS. See Castrates. Many of the eunuches, destined to be the being of distinguished men, truth has been often sacrificed in them to flattery. The French academy, especially, has paid this tribute to literary merit. The epoch of eulogies began with Fontenelle, who published two volumes of them, in 1731, distinguished for their clearness, vivacity, and elegance. Those which followed them were written with much oratorical pomp. Some of the best eulo-
gies are by Thomas (author of Essais sur les Eloges), D'Alenbert, La Harpe, and Condorcet.

EUPHONY (from the Greek euphōnia, in Latin euphonia, from ēōphō, sound, and ēō, well), means agreeable and harmonious sound, particularly the harmony of words; thus, for instance, we say, in Italian more regard has, probably, been paid to eu-

phony than in any other modern European language; in fact, this language has often disregarded etymology for the sake of euphony. In general, it may be said that the Italians have studied the Latin and Italian more regard has, probably, been paid to eu-

phonic words than in any other modern European language; in fact, this language has often disregarded etymology for the sake of euphony. In general, it may be said that the Italians have studied the Latin and Italian more regard has, probably, been paid to eu-

phonic words than in any other modern European language; in fact, this language has often disregarded etymology for the sake of euphony. In general, it may be said that the Italians have studi
Euripides—Europe.

under Anaxagoras (not Socrates). These studies had so powerful an influence on his poetry, that he might be called the rhetorical tragedian with no less truth than he is called the philosophical tragedian. Euripides lived at a time when Greek tragedy was carried to its greatest perfection. He was ranked as second to whom is highest glory. These two poets were the favourites of their age. The tragedies of Euripides were represented at the same time with those of Sophocles, and sometimes gained the prize in preference. The critics, indeed, did not agree unanimously in the fifth decima of the prize; and the unsparing satire of Aristophanes was directed against the popular poet, whom he ridiculed in cutting parodies. "Aristophanes," says Richter, "like another Moses, showers his frogs on Euripides, only to chastise his lux and relaxing morality, not blinded, like Socrates, by his moral sentences to the immoral tendency of the whole."

The number of his tragedies has been variously stated, from seventy-five to ninety-two; as it is known that he finished his works with great care, the former estimate seems more probable. Only nineteen plays are extant. He is, however, known in the following criticism by A. W. Schlegel: "Consid- ering Euripides by himself, without comparing him with his predecessors, selecting many of his better pieces, and taking single passages in others, we cannot deny him extraordinary merit. But if we regard him in connexion with the history of the art, and look at the whole scope and aim of his pieces, as it appears in those which have come down to us, we find cause for much and severe censure. Of few writers can so much good and evil be truly said. He had an inexhaustible invention, and the most various accomplishments; but, amidst an abundance of brill- iant and attractive qualities, there is wanting that elevated gravity of spirit, and that nice dramatic tact, which we admire in Æschylus and Sophocles. He is always aiming to please, no matter by what means. Hence it is that he is so unequal: frequently he has passages of exquisite beauty; at other times he sinks into mere common-place. With all his faults, he has an admirable ease, and a certain insinuating grace." If the reader would view both sides of the poet's character, he may peruse A. W. Schlie- gel's essay, A Comparison of the Poems of Euripides with that of Racine, in connexion with what he has said in this fourth discourse on the Dramatic Art and Literature. A part of the faults of Euripides may be charged to the age in which he lived, which was an age of sophistical disposition, of political controversy, and rhetorical art; though it can never be a sufficient apology for wrong that it is fashion- able. Euripides made it a chief aim to awaken the tender emotions. "He knew," says another critic, "the nature of the passions, and had the art of in- venting situations in which they could have their full play. Withal he has an elegant tone, which seldom or never fails of its effect. Yet, as his characters were once in the enjoyment of distinguished pros- perity, and the retrospect, in their present situation, checks the violence of the passions, and lowers them to the tone of lamentation. For this reason, in his tragedies, the passions are breathed forth in soft conceits and cadences; his characters are raised to a lofty height; for the same reason, he is so rich in his descriptions, and philosophical declamations, as his personages have always coolness enough to reflect on their situa- tion. Euripides knew well what was suited to pro- duce an effect at the moment. The times of boldness, when Æschylus wrote, were past, and the power of the state was commencing gradually to sink. The pathetic manner of Euripides then became popular,"

Various faults may be found with his loose plan, his often unintelligible changes of character, his super- fuous choruses, and sometimes, too, his subject; but he stands pre-eminent in true, natural expression of the passions, in interesting situations, original group- ings of character, and very keen observation of human nature. He is a master, too, in the art of managing the dialogue, in adapting the speeches and answers to the character, the sex, and station, the known or private views, the present disposition of the speaker, and the necessity of the moment, in short, to all that gives distinctness and individuality to a person. There is, too, a certain teudlessness and softness dif- used over his writings, which cannot fail to please the mind. He has been often called the woman- hater, probably on account of his many severe sen- tences on the follies of the female sex. Yet he was not disinclined to the sex, and is said to have had two wives. We meet, too, in his works, occasional descriptions of female loveliness, and his sensibility to the nobler charms of female purity and virtue cannot be denied. It is not likely, as has been said, that his hatred of women, and of his own wife in particular, derived from the fact that he went at the invitation of king Archelais, whose favour and confidence he enjoyed. According to the tradition, he there met with an unfortunate end, being torn to pieces by dogs, or dying in consequence of their bites. The monarch erected a splendid monument, with the inscription, "Thy memory, O Euripides, will never perish." Still more honourable was the inscription on the cenotaph at Athens: "All Greece is the monument of Euripides; the Macedo- nian earth covers only his bones." Sophocles, who survived him, publicly mourned his loss.

The most celebrated editions of Euripides are those of Paul Stephanus (Paris, 1692, 2 vols.) of Barnes (Cambridge, 1694, folio), of Musgrave (Ox- ford, 1778, 4 vols. 4to.), and of Morus and Beck (Leipsic, 1779-88, 4to.). The latest critical ed- itions are by Matthiae (Leipsic, 1813-20, 6 vols.), and by Bothe (Leipsic, 1825, sqq.). Valkenauer, Brucek, Porson, Markland, &c. have devoted them- selves to the illustration of single tragedies.

EUROPE, in mythology; the daughter of Agenor, king of the Phœnicians, and the nymph Melia, or Telephassa, and sister of Cadmus, whose name signi- fying the white, is said to have been given to the European continent, from whom those having the white complexion are white. The fable relates, that one of Juno's attendants stole a paint-box from the toilet of her mistress, and gave it to Europa. Her native beauty, heightened by this means, won the love of Jupiter, who, in order to possess her, changed himself into a white bull, and appeared in this shape on the shores of the sea, where she was strolling with her companions. At- tracted by the beauty and gentleness of the animal, she even ventured to mount upon his back, when he immediately plunged into the sea with his lovely prize, and swam to the island of Crete. Here he transformed himself into a beautiful palace, and erected by his Minos, Sarpedon, and Rhadamanthus. She afterwards married Asterius, king of Crete, who, being childless, adopted her three sons.

EUROPE: the smallest of the great divisions of our globe, but distinguished above the rest by the character of its population, the superior cultivation of the soil, the flourishing state of its arts and sciences, industry, and commerce, the multitude of large and well-built cities, and its power and influ- ence over the other parts of the world.

Of the origin of its name and its inhabitants, his- tory furnishes no certain account. It is most prob- able, that the first inhabitants emigrated from Asia, the cradle of the human race. Greece was first peo-
plied by the emigrants. In that country, about 1400 years before our era, grew up the Hellenes, who soon outstripped the civilization of Asia. The most flourishing period of that nation, commonly called the Greeks, was about 300 B.C. Equally distinguished in action and speculation, adorned by the arts and sciences, rich in the noblest productions of their cultivated minds, it will be, as long as civilization endures, an object of admiration, and its remains the foundation of our knowledge and taste. But with the dissolution of Alexander’s empire, which had been raised on the ruins of Grecian freedom, Greece sank into insignificance.

At the same time, another nation was rising in Italy, the Romans, who appeared, indeed, at an earlier period, but made no figure in history till they had become masters of Italy, and had proved victorious in their struggle with the Carthaginians. For that period, their power began to extend over all Europe. They subdued the divided Greeks, and transplanted their arts and refinement to the Italian soil. By the progress of the Roman arms, Spain, Portugal, France, the coast of England, Belgium, Helvetia, the part of Germany between the Danube and the Alps, the Hungarian provinces (then called Pannonia, and Dacia,) and Germany, received the Roman manners, language, and refinement. Agriculture was introduced, and flourishing cities rose among the wandering nomades. The Christian religion, which spread throughout the wide Roman empire, was also a powerful instrument in the civilization of most of the European nations. Germany alone resisted the overwhelming power of Rome, and thereby prevented the spreading of Roman civilization in the north of Europe, which still remained unknown in history.

With the fall of the Roman empire, occasioned chiefly by its separation into the Eastern and Western empires, a great change in the political constitution of Europe was produced, by the universal emigration of the northern nations. These nations poured down upon the beautiful and cultivated countries of the Roman empire, now in the weakness of decline, and Roman art and science were obliged to give place to the barbarity, the deep ignorance, and, in general, the condition of the middle ages. The Ostrogoths and Lombards settled in Italy, the Franks in France, the Visigoths in Spain, and the Anglo-Saxons in South Britain, reducing the inhabitants to subjection, or becoming incorporated with them. The empire of the Franks was enlarged, under Charles Magnu, to such an extent, that the kingdoms of France, Germany, Italy, Burgundy, Lorraine, and Navarre were afterwards formed out of it. About this time, the northern and eastern nations of Europe began to exert an influence in the affairs of the world. The Slavs, or Scelavians, founded kingdoms in Bohemia, Poland, Russia, and the north of Germany; the Magyars appeared in Hungary, and the Norsemen made their appearance in Scotland.

The establishment of a hierarchy was now undertaken by the popes, and finally carried to its completion by Gregory VII, and Innocent III. (See Empire.) Their power was increased by the crusades. Nevertheless, this struggle between Asia and Europe had the effect of forming a new state, containing the powers gradually to throw off the chains of bondage, and of introducing the arts and sciences through the Arabs and Greeks into Europe.

The revival of letters, by the Greeks fleeing from Constantinople, gave an entirely new impulse to European institutions. They introduced the invention of printing, and the reformation, served to cherish and develop these seeds of improvement. The feudal contests, the struggle of privileges, led eventually to the acknowledgment and establishment of the rights of the individual. (See City, Corporation, and Estates.) Out of the chaos of the middle ages, arose the states of Germany, France, Spain, Portugal, England, Scotland, Switzerland, the Italian powers, Hungary, Bohemia, Poland, Denmark, Sweden, England, and the capture of Constantinople (1453,) the Turks, with their satirical military despotism, became a European power. Austria, Holland, Prussia, and Sardinia were also added to the number of European states; and Russia, from the time of Peter I., was changed from an Asiatic into a European empire. The attempts of Charles V. and Louis XIV. to become masters of Europe failed; and, in our own times, Napoleon conceived the project of forming, from the European states, a universal monarchy, pursued it for 10 years, and failed also.

Since the formation of the states of Europe, the following have disappeared from the list of independent powers: Hungry, Poland, the German empire, Scotland, Bohemia, Venice, Genoa, and Milan. The following have been added: the states of the German confederacy, the Italian states, the republic of the Ionian islands, and that of Cracow. A natural consequence of general diffusion of intellectual cultivation, and the decay of the feudal system, has been the gradual development of the ideas of equal right and individual liberty; bloody struggles have naturally ensued between the adherents of the new and old opinions, and Europe is still convulsed by them. See Feudal System.

Europe is washed on three sides by the sea, which is called by different names, and belongs either to the Northern Arctic or the Atlantic ocean. A narrow strait of the Mediterranean separates it from Africa. On the east, it joins the main land, being there separated from Asia by an imaginary line. Europe is situated in the northern frozen and the northern temperate zones, between 10° and 63° east longitude, and 30° and 71° north latitude. Including the islands, which contain about 317,000 square miles, the whole extent of Europe amounts to about 3,250,000 square miles, of which Russia comprises nearly one half. The greatest length, from Cape St. Vincent, to the Cape of Good Hope, is about 7100 miles. The breadth, from cape Matapan, in the Morea, to the North Cape, in Norway, is about 2900 miles.

Europe is remarkably well watered, although its rivers have not so long a course, nor such large canals, as those in other parts of the globe, particularly in America. The principal rivers are the Elbe, the Rhone, and the Po, running into the Mediterranean; the Danube, the Dnieper, and the Dniester, into the Black sea; the Don, into the sea of Azof; the Volga, into the Caspian; the Dvina, into the Arctic ocean; the Vistula, and the Oder, into the Baltic; the Elbe, Weser, and Rhine, into the North sea; the Seine, into the English channel; the Loire and Garonne, the Duero and Tagus, the Guadalquivir, into the Atlantic. The Volga and Dnieper are the longest of its numerous rivers, and the Danube the largest, which, however, bear no comparison with the North American, are in the north of Europe, viz., in Russia, the lakes Ladoga (the largest in Europe), Onega, and Tchudskoe, or Pospel; in Sweden, lakes Maler, Wener, and Wetter. On the borders of Germany and Switzerland is lake Constance; the borders of Italy and Switzerland is the lake of Geneva (lake Leman); in Hungary are lakes Platten and Neusiedler.

A great part of Europe is mountainous; the south-
The most elevated region is Switzerland, from which there is a descent, which terminates, on the side of the North sea and the Baltic, in low plains. The lowest and most level parts are Holland and northern Germany, Denmark, Russia, and Prussia. The highest mountains are the Alps, in Switzerland and Italy, which spread from those countries in various directions, extend westwardly into France, and are connected by the Cevennes with the Pyrenees, which separate France from Spain. One chain of the Alps stretches southwards towards the Mediterranean; then, taking an easterly course, runs through Italy, under the name of the Apennines. Several branches run eastward from the Alps, through the south of Germany, as far as the Turkish provinces. Another chain, the Jura, runs to the north, and separates Switzerland from France. In the east of Europe are the Carpathian mountains, which, on one side, meet the Sentician range, and on the other, the mountains of Turkey in Europe. The highest mountain in Europe is Mont Blanc, in Savoy, one of the Alps, which is said to be 15,766 feet above the level of the sea. Several of the peaks in the Euroalp are as high as Vesuvius and Hecla. It is a fact worthy of notice, that none of the volcanoes of Europe are to be found in any of the great chains of mountains which have just been enumerated. The only one on the continent is Vesuvius, and this is too much detached to be considered as properly forming one of the Apennines. Elba, in the island of Sicily, rising to the height of 10 or 11,000 feet above the level of the sea, is the largest European volcano. The Lipari islands, anciently called the Aolian, a few miles to the north of Sicily, bear evident marks of a volcanic origin; and, in several of them, subterranean fires are still in operation. The volcano of Stromboli is in almost incessant activity, and differs, in this respect, from any other with which we are acquainted. The Azores, in the Atlantic ocean, are doubtless indebted for their formation to the same circumstance as the Lipari islands; and, indeed, new rocks have risen from the sea in their vicinity, within a recent period. An eruption took place at St. George, during the present century. Iceland, too, though lying under 65° of north latitude, presents the most abundant tokens of the presence of volcanic fire, and has often suffered under its devastations. Mount Hecla is the most noted, though not the only source of the eruption in this island.

To the possession of many inland seas, and, consequently, of a line of coast very extensive in proportion to its area, Europe is greatly indebted for the great advancement of its inhabitants in civilization; these circumstances being favourable to that intercourse without which nations never make great advances. The peninsulas are six: Scandinavia, Jutland, Crimea (Taurica Chersonese), Italy, Spain, and Greece. The soil of Europe, though not equal in luxuriance to that of the tropics, is, almost throughout, fit for cultivation. The tracts in the northern zone are almost the only exceptions.

With respect to climate, Europe may be divided into three parts,—the warm region, where the lemon-trees grow wild, as far as 48° north lat., having a pleasant spring, a hot summer, and short winter; the temperate, as far as 65° N., in which grain ripens; and the cold region, to the extreme north, where nothing will grow but reindeer-moss, and no domestic animal can live except the reindeer.

The products are not so various as in other parts of the world, and many of them were originally brought from foreign countries and naturalized; but, on the other hand, Europe can boast of a more perfect cultivation. Among the animals are horses, some of which are of the noblest breeds, horned cattle, sheep in Spain, Saxony, and England, of the finest wool, asses, goats, swine, dogs, reindeer, wild beasts of different sorts; fowls for food, and for house and ship building. The birch and the willow best endure the cold of the northern polar circle. Europe produces all the varieties of metals and minerals in great excellence and abundance. In gold and silver, Hungary and Transylvania are richest; in iron, the northern countries, Sweden, Norway, and Russia. Salt of all kinds, rock, sea, and spring salt, is also abundant in Europe.

The inhabitants, estimated by Malte-Brun at 200 millions, at least, are unequally distributed; in Russia and Sweden there are from 15 to 18 to a square mile; in the Netherlands, where the population is most dense, Italy, France, Great Britain, and Germany, the same extent supports from 150 to 250 persons. The inhabitants consist of several different races, speaking distinct languages. The stocks to which the principal languages belong are—the Teutonic, which is the mother of the German, Dutch, English, Swedish, and Danish; the Latin, or Roman, now spoken only by the learned, but the mother of the Italian, French, Spanish, Portuguese, and Walachian; the Slavonic, to which belong the Russian, Polish, Bohemian, Bulgarian, Vandal, and the Servian, or Illyrian. Besides these, there are the modern Greek; the Tuscan, or Tartare; the Finish, and Hungarian; the Cimbri, in Wales, and the north-west part of France (Bretagne); the Scotch, or Gaelic, in Scotland and Ireland; the Basque, among the Pyrenees. The most widely spoken is the German, with its kindred languages, formed by a union of the Latin and the Teutonic.

The prevailing religion is the Christian, which includes several churches, viz., the Roman Catholic, which is the most numerous; the Protestant (Lutheran, Calvinistic, and Anglican), consisting of numerous sects,—Anabaptists, Memnonites, Quakers, Unitarians, Methodists, Moravians; and the Greek church. A part of the inhabitants profess the Jewish, a part the Molnunmedan religion. Among the Laplanders and Samoedies there are also some heathens, but their number is small.

Agriculture has made great advances in Europe, and is daily improving. In this respect, those countries are particularly distinguished where the Teutonic languages are spoken, as also, are France, and a part of Italy.

In no part of the world are manufactures carried to such perfection as in several of the European countries, especially in Great Britain, France, the Netherlands, and Germany. The manufactures there are not only native European, but also foreign products, and supply all the wants and luxuries of life. Commerce is not less active, and is promoted by well-constructed roads and canals, by well-organized posts, banks, insurance companies, commercial companies, and fairs. The commerce of Europe extends...
to all quarters of the world, and every sea is filled with European ships. In this respect, Great Britain is most distinguished.

Europe is the seat of art and science; to her belongs the honour of discovering the most important truths, of giving birth to the most useful inventions, the finest productions of genius, the improvement of all the sciences. In intellectual progress, the Teutonic races, and those who speak the languages derived from the Latin, have surpassed the Slavonic nations. The Turks have remained strangers, in many respects, to the literary and scientific improvement which has marked the other European nations. Eighty-five universities provide for the higher branches of education; numerous gymnasia and academies for the preparatory studies, and a great number of lower schools, particularly in Germany, are employed in educating the common people. In many places there are academies of science, and societies of all kinds, for the cultivation of the arts and sciences.

By its physical situation, Europe is divided into East and West Europe. West Europe comprises the Pyrenean peninsula, Spain and Portugal, the countries west of the Alps (France), the countries north of the Alps (Switzerland, Germany, and the Netherlands), the country south of the Alps (Italy), the islands of the North sea (Great Britain, Ireland, and Iceland), and the countries on the Baltic (Denmark, Norway, Sweden, and Prussia). East Europe contains the countries north of the Carpathian mountains (Russia and Galicia), and the countries south of the Carpathian mountains (Hungary, in its more comprehensive sense, and Turkey).

The following are the political states of Europe: the three empires of Austria, Russia, and Turkey; eighteen kingdoms, viz., Portugal, Spain, France, Great Britain, Belgium, Holland, Denmark, Sweden, Norway, Sardinia, the Two Sicilies, Greece, Prussia, Bavaria, Saxony, Hanover, Wurttemberg, and Poland; one ecclesiastical state, the papal dominions; eight republics, viz., Switzerland, the Ionian islands, Crete, San Marino, Hamburg, Liebeck, Bremen, and Frankfurt; one electorate, Hesse; six grand-duchies, Baden, Hesse-Darmstadt, Saxo-Weimar, Mecklenburg-Schwerin, Mecklenburg-Strelitz, and Tuscany; twelve duchies, viz., Oldenburg, Gotha, Meiningen, Altenburg, Brunswick, Nassau, Dessau, Hildesheim, Cassel, and Lucerne; one landgraviate, Hesse-Homburg; one grand principality, Finland, and twelve principalities, viz., Hohenzollern-Hechingen, Hohenzollern-Sigmaringen, Schwarzburg-Rudolstadt, Schwarzburg-Sondershausen, Waldeck, Lippe-Detmold, Schaumburg-Lippe, Lichtenstein, Reuss-Greva, Reuss-Schleie, Reuss-Lobenstein, and Reuss-Ebersdorf.

Inhabitants. The most important races inhabiting Europe are classed by Hassan, in his statistical tables (1823), in the following proportions: 1. Roman nations, 75,829,000—including the French, Italians, Spaniards, Portuguese, Walloons, Walachians, and other Oriental nations; 6,451,500—including the Germans, Dutch, and English; Danes, Norwegians, Swedes; 3, Sclavonian nations, 68,255,000—including the Russians, Poles, Lithuanians, Livonians, &c., Wendish, &c., Tschechen, Sclavonians, Croats, Rascians, and Servians, Moravians, and some others; 4, the Highlanders, and Irish, 8,200,000. (This number is considerably beyond the truth). 5. Turks, 2,350,000; 6. Greeks, 4,834,000; 7. Armenians, 550,000; 8. Magyarians, 4,472,000—including the Bulgarians, 522,000; 9. Finns, 1,570,000, Esthonian, 450,000, Laplanders, 17,800 (the three last belong to the Mongol race); 10. Cymri, or Low Bretons, 1,661,000; 11. Basques, 620,000; 12. Maltese, 88,000. The tables of the same distinguished geographer, published in 1817, estimate the Jews at 1,179,500; the Gipsies at 313,000; the Armenians at 1,500,000.

EURYALE: 1. queen of the Amazons.—2. a daughter of Minos.—3. a daughter of Proetus, king of Argos.—4. See Gorgons.

EURYALUS: 1. one of the Greek heroes at the siege of Troy.—2. One of the companions of Eneas, famous for the destruction of Troy, with whom he was killed, after having forced his way with him into the enemy’s camp. Virgil, Neœid, IX. 175.

EURYDICE. Among the many women of antiquity who bore this name, the most celebrated is the wife of Orpheus, who died by the bite of a serpent. Her husband, inconsolable for her loss, descended to the lower world, and, by the charms of his lyre, moved the infernal deities to grant him permission to bring her back. This they granted, on condition that he would not look round upon her till he had reached the upper world. Forgetting his promise, he looked back, and lost her for ever. This story has often been copied by the poets, and has often been combined with that of Medea.

EURYNOME; the daughter of Oceanus; according to希，the mother of the Graces. (q. v.)

EUSEBIA (Greek); piety; in the modern allegorical sense, the presiding genius of theology.

EUSEBIUS, surnamed Pamphitus, the father of ecclesiastical history, was born at Cæsarea, in Palestine, about 270, A. D., and died about 340. He was a presbyter, and, in 314, was appointed bishop in his native city. He was at first opposed to the Arius, but afterwards became their advocate, and with them condemned the doctrines of Athanasius. His ecclesiastical history, written, like his other works, in Greek, is contained in ten books, and extends from the birth of Christ to 324 (the best editions are that of Valesius, Paris, 1639, fol. and that of Reading, Canterbury, 1720, fol.). Of his Chronicle, with the exception of some fragments of the original, we have only an Armenian translation, and the Latin version of Jerome. Besides these, there are yet extant, fifteen books of his Praeparatio Evangelica, which is particularly valuable for the extracts it contains from lost philosophical works. Of the twenty books of his Demonstratio Evangelica, in which he shows the superiority of Christianity to Judaism, we have only that which is called the Gospels, and which, in a life or rather eulogium, of Constantine. Notices of his life may be found in the above quoted edition of Valesius. Dant, Moller, and Kessner have written briefly on his value and credibility as an historian.

EUSTACHI, BARTOLOMEO, a physician and anatomist, born at San Severino, in the mark of Ancona, studied Latin, Greek, and Arabic at Rome, and devoted, himself to the various departments of medical science, more particularly those which relate to the structure of the human body, and was made physician to the cardinals Carlo Borromeo, and Giulio della Rovera; he was also appointed professor in the institution della Sapienza, at Rome. There is hardly any part of anatomical science which he did not enrich by profound researches or important discoveries. Some of the parts discovered by him have received their names from him; thus the canal that unites the internal ear with the back part of the mouth, is called Eustachian, Eustachian tube, or Eustachian chun valve of the heart. Among his works are his Tabula anatomeae, quas e Tenebrae tandem vindicatae, et Pontificis Clementia XI. Maniscenta Dono acceptas, Prefatione Notisque illustrato Joanne-Maria Lan- celi (Rome, 1714, fol.). This work is remarkable as containing excellent drawings of the human body, which were executed in 1552, but not discovered and
published till a much later period. The text has never been found. Another edition was published by himself, containing in the tables (Leyden, 1743, fol.).

Another of his works, De Anatomoniae Controversia, is also lost. Besides these, we have many other valuable works by him. Berthouart published an edition of them at Leyden, 1707, which was reprinted at Delft, 1736. Eustachi died at Rome, 1774.

In 1814, Napoleon, the emperor and the geographer Dionysius, originated a monk, afterwards dean, and finally, 1815, archbishop of Thessalonica. He died after 1194. Though not very enlightened in his theological views, he was deeply read in the classics, and a man of extensive erudition; as appears from his commentaries compiled from the old scholastics, of which that on Homer, in particular, is an inexhaustible mine of philological learning (Rome, 1542—50, 4 vols. fol., and Bale, 1559—60, 3 vols. fol., new edition Leipsic, by Weiged, commenced in 1825, 4to).

EUSTATIA, Sr., one of the Leeward islands, fifteen miles south-east of Saba, and eight north-west of St. Christopher's, is a huge rock, rising out of the waves, in the form of a pyramid, twenty-nine miles in circumference. Sugar, cotton, and maize are raised here; but the principal production is tobacco, which is cultivated on the sides of the pyramid, to its very top. There is but one landing place, and that, though difficult of access, is strongly fortified. The number of inhabitants is 18,000, of whom 4000 are whites, chiefly Dutch, and 14,000 negroes. The Dutch made the first settlement on this island about the year 1560. In the year 1665, it was captured by an English expedition. The French, however, soon afterwards expelled the British, and restored it to the Dutch in 1667. The English retook it in 1689, and restored it on the termination of the war in 1697. In 1781, a large naval and military force, under admiral Rodney, compelled the inhabitants, who were incapable of defence, to submit at discretion. The English commanders, under the pretence that the people of the island had supplied the United States of America with naval stores, confiscated all private property, and, at one blow, reduced the unfortunate inhabitants to poverty. In the same year, however, the island was retaken by a small body of French troops, under the command of the marquis de Bouille. St. Eustatia was again attacked by the British in 1809, and compelled to submit; but, in 1814, the Dutch government was restored.

EUTERPE; one of the muses, considered as presiding over the Muses and the muses of the flute, is ascribed to her. She is usually represented as a virgin crowned with flowers, having a flute in her hand, or with various instruments about her. As her name denotes, she is the insipier of pleasure. See Muses.

EUTANASIA; a gentle, easy, happy death. Wichman gave this name to one of his works.

EUTROPIUS, Flavius; a Latin historian, who, as he himself informs us, bore arms under the emperor Julian. The place of his birth and his history are unknown to us. He flourished about 360 A. D. His abridgment of the history of Rome (Breviarium Historia Romana) reaches from the foundation of the city to the time of the emperor Valens, to whom it is dedicated. The style, though not finished, is perspicuous. The most esteemed editions are those of Havercamp (Leyden, 1729), Verseik (Leyden, 1762, 2 vols.), and Tschucke Leipsic (1804).

EUXINE (Pontus Euxinus); the ancient name for the Black sea.

EYAN; a surname of Bacchus. See Bacchus.

EVAPORATION is the conversion of liquid and m.
EVE—EVIDENCE.

stance, in order to separate the volatile parts. It differs from distillation, its object being chiefly to preserve the more fixed matters, while the volatile substances are allowed to escape. Accordingly, the vessels in which these two operations are performed, are different; evaporation being commonly made to take place in open, shallow vessels, and distillation in an apparatus nearly closed from the external air.

EVELYN, JOHN: an ingenious cultivator of philosophy and the liberal and useful arts in England in the seventeenth century. He was the son of Richard Evelyn, esquire, of Wotton, in Surrey, where he was born, October 31, 1620. He was entered as a student at Belles, college, as a scholar required to the Middle Temple. The civil war induced him to leave England, and he spent some years in France and Italy. He returned home in 1651, and, in 1656, published a poetical version of the first book of Lucretius. He made some efforts in favour of the royal cause in 1659; on which account he was much favoured by Charles II., after his restoration. In 1662, he published his Sculptura, or the History and Art of Chalcoography, or Engraving on Copper, 8vo, reprinted in 1755. On the foundation of the royal society, he was nominated one of the first fellows; and at its meetings he read a discourse on forest trees, which formed the basis of his later celebrated paper on the subject. This was Sylvae, or a Discourse of Forest Trees, and the Propagation of Timber in his Majesty's Dominions; to which is annexed Pomona, or an Appendix concerning Fruit Trees, in relation to the Culture, &c. (1664, fol.); a work several times reprinted, particularly in 1778 and 1812, with the improvement of doctor Andrew Hunter. As a sequel to this treatise, he published Terra, a Philosophical Discourse of Earth, relating to the Culture and Improvement of it for Vegetation and the Propagation of Plants (1673, folio). This also was edited by doctor Hunter, in 1778. Mr Evelyn was appointed one of the commissioners of the sick and wounded seamen in 1664; and also a commissioner for rebuilding St. Paul's cathedral. When Charles II. formed a board of trade, he was nominated one of the members; and on this occasion he drew up a small tract on navigation and commerce. In the reign of James II., he was one of the commissioners for executing the decreed during the absence of the earl of Clarendon in Ireland. He continued in favour at court after the revolution, and was made treasurer of Greenwich hospital. He died February 27, 1705—6. The memoirs of Evelyn, comprehending an interesting diary and correspondence, were published by W. Bray, esquire, 1819, 2 vols. 4to; and more recently his miscellaneous works have been collected and given to the public. They include treatises on gardening, architecture, medals, &c., besides a curious tract, entitled Mandus muliebris; or the Ladies' Dressing Room unlocked and her Toilette spread, in Burlesque; together with the Pop's Dictionary, Catalogue of Hard Names and Terms of the Art Cosmetics, &c., first printed in 1690.

EVERDINGEN; the name of a celebrated Dutch family of painters. Of these, Cesar van Everdingen was distinguished as a portrait and historical painter and architect. He was born at Alkmaer 1606, died 1679. His father, Adrian, who was a celebrated landscape painter, born 1591. His sea pieces, in which he represents the disturbed elements with great truth to nature, are particularly celebrated. In forest scenes, too, he was a master. He is known, also, as an able engraver, by his plates to Recorder Fox. He died in 1673. The youngest brother, John van Everdingen, born 1621, was a celebrated portrait painter; born 1561. Of his own amusement.

EVERTSEN. John, admiral of the Dutch fleet, died 1666. In his time, the naval power of the Dutch was raised to its highest point. The victories of Ruyter, Tromp, and Vasenmaker had made the flag of Holland respected by all nations; and several members of the Everdinger family, which originally belonged to Zealand, all companions and pupils of those naval heroes, followed him in the steps of their great leaders. A brother of John Everdinger, named Cornelius, likewise admiral in the service of the republic, died for his country at the bloody battle of July 15, 1666, against the English. John was at that time retired from the service; but, no sooner had he received the news of his brother's death than he wrote to the states-general as follows: "I wish to return again into active service, and to devote myself for my country. My father, my four brothers, and my son, have already fallen honourably in the cause of the republic. Let me be permitted, like them, to die in my country's service." The wish of the gallant man was fulfilled. August 4, of the same year, he lost a leg in a battle with the English, and died, a few days after, of his wounds. The province of Zealand erected a splendid monument to the memory of John and Cornelius, at Middleburg, where their ashes are deposited with those of two others of the family, afterwards laid there, viz., admiral Cornelis Evertsen and his son John Evertsen, who died 1271.

EVIDENCE. In its most general sense, means the proofs which establish, or have a tendency to establish, any facts or conclusions. It may be divided into three sorts, mathematical, moral, and legal. The first is employed in the demonstrations which belong to pure mathematics; the second is employed in the general affairs of life, and in those reasons which are applied to convince the understanding, in cases not admitting of strict demonstration; the third is that which is employed in judicial tribunals for the purpose of deciding upon the right and wrongs of litigant parties.

Probably in every system of jurisprudence aiming at exactness, some rules are introduced, and some restrictions are allowed, in respect to evidence, different from those which belong to mere moral reasonings. According to the term, the same head, we shall confine ourselves altogether to the consideration of evidence in a legal view, and principally with reference to the existing rules of the common law, recognized in England. According to our system of jurisprudence in common law trials, it is the peculiar province of a jury to decide all matters of fact. The verdict of the jury is, however, to be given, and the trial is to be had, in the presence of a judge or judges, who preside at the trial, and are bound to decide matters of law, arising in the course of the trial. Whenever, therefore, a question arises, whether any thing offered as proof at such trial is or is not proper to be given to the jury as evidence, that question is to be decided by the court, and, unless permitted by the court, it can never legally come to the consideration of the jury. Hence, whatever is so permitted to be brought before the jury, for the purpose of enabling them to decide any matter of fact in question, the parties, is, in a legal sense, evidence, and is so called, in contradistinction to mere argument and comment. This gives rise to a very important distinction, at the common law, as to the competency and the credibility of evidence. It is competent, when, by the principles of law, it is admissible to establish any fact, or has any tendency to prove anything to be true; the jury, when properly introduced, it affords satisfactory proof of the fact. It follows,
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therefore, that evidence may be competent to be produced before a jury, when it may, nevertheless, not amount to credible proof, so as to satisfy the minds of the jury; and, on the other hand, may be such, as, if heard, they would satisfy their minds of the truth of the fact, but yet, by the rules of law, it is not admissible. Whether there is any evidence of a fact, is a question for the court, whether it is sufficient, is a question for the jury, when the cause is tried by a jury.

Evidence is, in its nature, divisible into two sorts:—first, that which is direct and positive proof of any fact; and, secondly, that which is presumptive and circumstantial. It is again divisible, in respect to the mode or instruments of proof, into two sorts:—first, written evidence; and, secondly, unwritten or oral evidence. We are accustomed to consider that as direct and positive evidence, which is proved by some writing containing a positive statement of the facts, and binding the party whom it affects; or that which is proved by some witness, who has, and avers himself to have, positive knowledge thereof, by means of his senses, or his own experience, not so directly and positively established, but is deduced from other facts in evidence, it is presumptive and circumstantial only. Perhaps, in a strictly philosophical sense, much of the evidence usually denominated positive is but presumptive; for there is an admission made in it of another character of evidence, though the presumption may usually be deemed irremissible proof. For instance, a promissory note is offered in evidence, as signed by the defendant; a witness, who attested it, swears to the execution and signature of the defendant. This is usually deemed positive proof; and yet it will be at once perceived, that it rests on the credibility of the witness, and the presumption that he has sworn what is true, which is a fact, that, in its nature, is not capable of absolute proof. But, however this may be, in a practical sense, the distinction above stated is sufficiently intelligible and well-settled for all the purposes of human life.

I. As to presumptive evidence. It must be obvious that in a very great proportion of the questions of fact arising in the litigations before judicial tribunals, the proofs must be of a merely presumptive nature. The want of written proofs; the death, or defect of memory, or treachery, of witnesses; the imminence of the transaction, itself, founded in fraud, or in secret contrivances, or in personal confidence; all these, and many other considerations, require us to recur perpetually to presumptive evidence. And especially is this true in respect to public crimes; for these are rarely committed under such circumstances as to lead to positive, unequivocal evidence of them. All presumptions are necessarily founded upon the connexion which human experience demonstrates usually to exist between a certain fact or circumstance, and other facts and circumstances. When the one occurs, the others are presumed. And every presumption of this nature are so strong and irresistible, that the law adopts them as presumptioes juris et de jure. Others, again, are left to be judged of according to the weight which the court and jury may think them entitled to, taken in connexion with all the other circumstances of the particular case. There are other presumptions, or rather circumstances of presumption, which are so uncertain and unsatisfactory in their own nature, that the law rejects them, as unworthy of any credit, and too unsafe to found any judgment upon. And presumptions, favourable or unfavourable, often arise from the conduct of the creditor or surety, or of either, or habits of a party, and may justly influence the decision of a case, but it would lead us too far to enter upon a full illustration of these remarks.—The common law has laid down many rules on the subject of presumptions, a few of which it may not be improper to enumerate.

Due is, that a man who sets up a thing as a fact, must be prepared to establish it, and it is a result, which must be the immediate consequence of his act. This is often applied to criminal cases. If a man strikes another with a dangerous weapon, and the effect of the blow would naturally produce death, he is deemed to intend to kill; and, under such circumstances, he cannot be permitted to set up the defence, that it was beside his intention. If a man strike another on the head with a heavy axe, so that his head is split open, and he instantly dies, the offender will not be permitted to excuse himself by pretending that he had no intention to kill. In our law, malice is a necessary ingredient in the crime of murder; and if a man kill another upon slight provocation, or use weapons, which are necessarily dangerous to life, or conduct himself in a very cruel and brutal manner, the presumption of the law is, that the act is malicious, and this presumption will prevail against the man, to the prejudice of any aversion to the contrary.—Another presumption of law is, that a man is innocent, until some proof is offered that he is guilty of a crime. He is not bound, in the first instance, to show his innocence, for the law imputes no wrong to him without some proof. But as soon as such proof is offered against him, the presumption disappears, and, under particular circumstances, the burden of proof is on him to establish his innocence. For instance, if one man is proved to have killed another, the law presumes the act malicious, unless circumstances arising from the evidence produced against him repel that conclusion; and therefore he is required satisfactorily to establish all the circumstances of accident, necessity, or infirmity, on which he relies for his defence.—These are instances in criminal cases. And there are many rules of presumption of a like nature in civil cases; some of which are conclusive, and others, again, which are liable to be rebutted by counter evidence; some founded on natural reasoning, and others, again, upon artificial grounds. Among these are the following: Every person is presumed to have done an act, the omission of which would be criminal in him, until the contrary is shown. Fraud is not to be presumed. A party is to be presumed to continue in life until the contrary is made to appear. Where the time is not evident, all the collateral circumstances to give it effect will also be presumed. A debt will be presumed paid after a long, unexplained lapse of time. Some presumptions of this nature are artificial. Thus, in our law, a bond will be presumed to be wholly paid after twenty years, where there have been no intermediate payments or recognitions of the debt. A man will be presumed to be dead after an absence of seven years, unexplained. An heir will be presumed to be in possession of land, of which his ancestor died seised. After twenty years enjoyment of an estate, or servitude, a title will be presumed. On the other hand, there are certain presumptions, which the law rejects (as has been already stated), because of their unsatisfactory nature and tendency. Thus, it is a general rule, that hearsay, or mere report and reputation of a fact, is not evidence, for this amounts to no more than the probability of the fact, not under oath, and of facts of which they may have no certain knowledge. Our law generally requires, that every fact to be substantiated against a person, should be proved by the testimony of a witness (when it is to be proved orally), who is sworn to speak the truth; or, if it is dependent upon written records, it must be proved by evidence that is sanctioned by him, or by which he ought to be bound, as importing
truth. There are, however, some exceptions to this rule. Whenever the hearsay or declaration accompanies a fact, or, as it is often expressed, is a part of the facts themselves, it may be evidence. So in cases of pedigrees, and of prescriptions, customs and boundaries, where, from the nature of the title, the facts are of great antiquity, or, ordinarily, other proofs could not be presumed to exist, hearsay or reputation is admitted as evidence. A monument, or tombstone, or family bible, stating a relationship, is, upon this ground, admitted as evidence of the relationship, as it would be of the death of a party. So declarations of parents, either written or oral, of the legitimacy and births of their children, especially if such declarations be before any litigation has arisen (tit. metu), are admissible, after their decease, in proof of the fact. But it has been lately said, that such declarations, made post mortem, are not admissible. The admission of hearsay, too, is limited in extent, even in these classes of cases. It is admitted only to prove public or general rights, and matters of general reputation. But it is said to be inadmissible to prove mere private rights, or particular facts; as, for instance, upon a question of property, that a parcel of land was in a particular spot; or in a case of birth, that the birth was in a particular place; or that a party has a private right of way.—There are other cases, where the solemn declarations of parties, under whom the party to be affected by them claims, or with whom (as it is technically expressed) he is in privity of title, or estate, or blood, are good evidence, as, for example, the recital of a fact in a deed, under which the party claims title, binds him. So the testimony of a deceased witness, given upon a former trial, where the same point was in issue between the same parties. So dying declarations of a party, who has received a mortal wound, are evidence against the party dying. Every one of the crimes here to go into large in this subject would require a treatise.

II. As to oral or unwritten evidence. Having considered the nature and operation of presumptive evidence, we may now pass to a consideration of some of the rules of evidence, as to witnesses—when they are, and when they are not competent to give testimony, for such it may be said, not under any known disability, are competent witnesses. Several grounds of incompetency exist, in the common law of England. 1. The first is, want of reason or understanding. Persons insane, lunatics, and idiots, are incompetent to be witnesses. But lunatics and persons temporarially insane, are, in their lucid intervals, or returns of reason, restored to their competency. A person deaf and dumb, if he has sufficient understanding, and can, by signs, make known his thoughts through an interpreter, or otherwise, is competent. But a person deaf, dumb, and blind, would be deemed incompetent. Children are admissible as witnesses as soon as they have a competent share of understanding, and know and feel the nature of an oath, and of the obligation to speak the truth. There can, therefore, scarcely be assigned any precise age fixed for the admission of them as witnesses. A child of five years of age is not necessarily incompetent, if he or she has sufficient reason, and a knowledge of the obligation and nature of an oath; although, certainly, at such an age, there ought to be great hesitation in admitting or relying on such testimony, and it ought to have little weight, if uncorroborated by other proof. And the like circumstances would govern the case of persons, whose memory and understanding are greatly impaired by age. But it is too little to know the value of truth, or to understand or remember facts, they are incompetent. But if they are not thus deficient, they are admissible, and their credit is to be left to the
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sufficient that a party has been convicted and punished for a crime; nor that the punishment itself is deemed by the public and reasonable. But the offence must, in its own nature, be infamous, or all capital offences and felonies are deemed infamous; all offenses importing fraud and gross moral depravity; every species of the crime of fraud, such as forgery, perjury, subornation of perjury, piracy, bribery, conspiracy to accuse another of a crime or to commit a fraud, or a written or unwritten contract and attaining counterfeit paper. Many other offenses, though very reprehensible in law, as well as in morals, do not carry with them this disqualification; such as libels, riots, assaults, and batteries, and other subordinate misdemeanors. A pardon will, in cases where incompetency is thus a consequence of the conviction, restore the party to his competency, at whatever time it may be granted; and even though the party has suffered under it an infamous punishment. Accomplices in an infamous crime, who have not been convicted, but who confess their own guilt, are not on that account disabled from giving testimony; but of course it is received with great distrust and caution, and it rarely happens, that any conviction takes place upon such testimony standing alone and uncorroborated.—4. A fourth ground of incompetency is an account of interest. It is, in our law, a general rule, that all persons, interested in the result of a cause, that is, such persons as must gain or lose by the event, are incompetent to give testimony in favor of the party, to whom their interest inclines them, but not incompetent to give testimony for the other party. The interest, however, required to exclude a witness, must be a legal interest (that is, a fixed interest, which is recognised in our jurisprudence as such), and not merely a prejudice, affection, or bias, or relationship, though these may go to his credit. In respect to relationship, a husband and wife cannot be witnesses for or against each other. They cannot be witnesses for each other, because their interests are, in legal contemplation, one and the same; nor, generally, against each other, because it would destroy the necessary confidence between them, which the law deems of primary and fundamental importance to social life. But all other relations may be witnesses, for or against each other, such as father and son, mother and daughter, or guardian and ward. But an attorney or counselor cannot be a witness against his client as to any matter of fact, which he derived from his client in professional confidence. This proceeds upon a large ground of public policy. If the interest be strictly a legal interest, it is immaterial whether it is great or small. If it be not a legal interest, it matters not how strong the bias of the party may be, for that goes to his credit only. It is not sufficient, that he has an interest in the question, or has a case of a like nature; he must have an interest in the event of the cause, or it must be such that the verdict may be given in his favor. It is also, required to exclude a witness, must be a fixed, present interest, and not a remote, possible, or contingent interest. Whenever, therefore, the interest of the witness is doubtful, he is of course admitted. If a witness is really interested in the event of the suit, he is incompetent, although he supposes himself not to be. It would seem to follow, that if he believed himself interested, and he were, in fact, not so, he ought to be admitted as a witness. This is the rule in English courts. A mere honorary engagement will not exclude a witness. If the verdict or record would secure any advantage to the witness, or repel a charge against him, or a claim upon him, in a future proceeding, he is incompetent. A party to the record is generally incompetent. So a person liable to costs; so bail in a suit; so a servant, in an action against his master for negligence or misconduct; the servant; so a tenant, to establish his landlord's title; so a debtor, in a suit to prove the debt, or a creditor, to increase the fund of a bankrupt's estate. These are merely put by way of example. If a witness has an interest on both sides, so that, on the whole, he stands indifferent, he is admissible. So, although he is interested, if that interest is released or extinguished, or if he is a poor debtor, or a swearer, his interest is restored. So where the witness offers to release his interest and the other party refuses. A member of a corporation is, generally, incompetent to testify in a suit, brought by the corporation. There are certain exceptions to the rule, as to the incompetency of witnesses on account of interest, which have been recognised in law, and which seem justified by a moral necessity. Thus, agents, factors, and servants are, generally, if not universally, admissible as witnesses for their principals, as to things within the scope of their agency. So persons entitled to a reward for conviction of other persons of a crime. So informers entitled to share in a penalty; but this is provided for by positive law. So a party robbed, in an action against the hundred (q. v.) for his loss; for otherwise he might not be able to prove the robbery, which is usually a secret thing. The rule of aiding being interested testimony, ex necessitate, is to be understood not of the particular case, but of a general necessity in cases belonging to that class.—If a witness be not interested at the time the fact occurred, he cannot, by creating a subsequent interest voluntarily on his own part, deprive the party of his testimony, as by making a bet, or wager on the event; but it is otherwise if the interest be created by act of law, or the act of the party by whom he is called. This may suffice as a general outline of the law, as to incompetency on account of interest. And cases often arise on this subject, of extreme nicety and subtlety, where the application of the rule is full of doubt and difficulty. But the consideration of such points properly belongs to a full treatise of evidence.

In respect to oral or unwritten evidence, there are some other rules, which it may not be without use to state. And, 1. as to admissions. These, when made by a party who is interested in the particular transaction, are evidence against him, though not for him. If there are several persons having a joint interest, an admission of one of them in respect to the joint interest, is evidence against all. So an admission of one partner, as to partnership transactions, is evidence against all the partners. But in cases of crimes and torts (q. v.), the rule is more limited. There, the admission of one defendant does not affect the others, unless it be a part of the res gesta; or there be proof of a common conspiracy or design, and the declarations of the party respect that design, and are a part of it, or tend to show the unity of design or the existence of it. But the admissions or declarations of an agent are not evidence against the principal, unless they are made in a case within the scope of his employment, or are a part of the res gesta. His admissions at another time, or in another employment, are not so. What he states while he is doing an act, as his agent, is evidence; what he states historically, afterwards, as to the acts and proceedings under his agency, is not, because better proof may be obtained, for he may be called to appear personally as a witness. There is a distinction in respect to the effect of admissions. In some cases, they are conclusive in some, not. The more often called to appear, when the party has thereby induced another to act, or give credit. In many other cases they may be contra-
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dicted, where they do not operate as a fraud on other persons.—2. Secoundly; in respect to con-
fessions. The common law seems to have taken a
distinction as to the effect of confessions in civil caus-
ees, as well as in criminal cases. Generally speaking,
they are evidence in civil cases as admissions. In
criminal cases, a free, voluntary confession by a
party, of his guilt, is also evidence, and is sufficient,
per se, to found a conviction; but where a confes-
sion has been obtained by duress, or threats, or by a
promise of pardon by an agent of the government
or the prosecutor, and the promise is not complied with,
the confession cannot be given in evidence. These
cases seem clear. But where a party has made a
confession by the advice of a friend, or upon
the suggestion of a stranger, who had no authority
to promise any indulgence or pardon, there seems some
contrariety of opinion, whether such a confession is,
or is not admissible as evidence. However this may
be (upon which it is unnecessary for us to express
any opinion), it is certain, that any facts ascer-
tained in consequence of any confession, are, in
cases, evidence; as if a party confess that he
has stolen goods, and tells where they are hidden, and then,
found, his statement, that they were there, would be evidence against him,
together with the fact of finding them.—And if
a prisoner has been admitted as a witness for the
government, and has confessed, and afterwards,
upon the trial of his accomplices, he has refused to
give evidence, it has been decided, that, under such
circumstances, he may be convicted upon his own
confession.—3. Thirdly, as to the number of wit-
tesses. Generally speaking, by the common law,
the testimony of a single witness, if believed, is suf-
cient to establish any fact. There are, however,
certain exceptions: First. On an indictment for
perjury, the evidence of one witness is not sufficient
to convict, for that would be only oath against oath.
There must be either two witnesses, or strong
independent evidence by circumstances, to cor-
borate the testimony of one. Secondly. In cases of
treason, by statute, in England, there must be two
witnesses to the same overt act of treason, or one
witness to one, and another witness to another overt
act of the same treason. Any confession would be
sufficient, even when made out of court, if proved by
witnesses. But in regard to collateral facts, a
single witness is sufficient, even in cases of treason.
Thirdly, in courts of equity, the answer of the defen-
dant (if there be only one) as truly and clearly
denies, will prevail, unless disproved by two witnesses or one witness and corro-
borative circumstances. A single witness, without
such circumstances, is insufficient. In suits at law,
the rule is otherwise; and a single witness here
suffices in ordinary cases. The practice in courts of
ecclesiastical jurisdiction is, in this respect, like that
of the courts of equity.
III. In respect to written evidence. This is divi-
sible into various sorts:—1. Statutes or acts of the
legislature. These, if of a public nature, are evi-
dence without any particular proof; for the judges
are bound to take notice of them as the law of the
land. They are deemed records, and of such a high
nature, that they cannot be contradicted; for it is
a general rule, that a record is conclusive proof, that
the judgment or decision was made as is therein
stated. But judicial tribunals will not take notice of
private acts of the legislature; and therefore, unless
made public, they are incapable of evidence in
proof only by a properly authenticated copy.
But when so proved, they, as matters of record,
cannot be contradicted. 2. Judgments. Those of
the superior courts of law are matters of record, and
are also conclusive. Generally speaking, verdicts
and judgments are evidence in cases between the
parties to the suit and privies; but they are not evi-
dence in cases between strangers. When the judg-
ment is in favor of the plaintiff, it is evidence in
the same parties, and their privies, and may be
pleaded as an estoppel. And in cases, where it need
not be so pleaded, it is, as evidence, conclusive
between the same parties and their privies. But it
is not evidence of any matter, which came collate-
really in question in the suit, nor if it is a matter inci-
dently cognizable, nor of any matter having proceeded
from the judgment. There are some exceptions to
the general rule. a. The judgment in a suit between
strangers is sometimes admissible, as the record of
a judgment against a principal, who has been con-
victed of a felony, may be given in evidence against
an accessory. b. Judgments of courts of a peculiar
and exclusive jurisdiction are sometimes conclusive
upon all persons. Thus judgments in rem, in cases
of seizures by the exchequer and other courts
having exclusive jurisdiction, are conclusive. So
sentences of courts of admiralty in matters of prize,
and in rem, at least, as to the direct effect of such
sentence, as to the rights of the persons obtaining
of ecclesiastical courts in cases of which they have
exclusive jurisdiction. c. Judgments in cases of
general rights, as of a right of common, a public
right of way, a custom, a pedigree, &c., are ad-
missible as evidence of such right, custom, &c., in
suit between the same parties. 3. There are other
judicial proceedings, which are not strictly matters
of record, as decrees in chancery, and judgments in
inferior courts, to which, however, the same general
principles apply, as matters of evidence, as to judg-
ments of record. 4. Depositions also, and examsi-
ations by magistrates, are often evidence in
cases between the same parties. There are other
cases, in which public writings, not judicial, such as
journals of parliament, public gazettes, rate or tax
books; ships' registers, rolls of manor courts, corpor-
ation books, and books of public entries, &c. &c.,
are evidence. But to go large into the distinctions
applicable to them would occupy too much space.
IV. In respect to private writings, the rules ap-
lplied to oral testimony are generally applicable
here. Such writings are evidence between parties
and privies, but not between strangers, except under
the limitations already stated. There are some few
cases, in which the written statements of the party
are relied on by themselves, and are to be deemed,
such as, for instance, his account books, to verify
charges made by him in respect to debts and
charges, which are properly matters of account,
such as debts and charges for goods sold, for labour
and services, and for materials furnished. But the
most common question, that arises in respect to
written instruments, relates to the mode of proving
them to be genuine, or what they purport to be.
When the original instrument is produced, it is ob-
jected to, and there is a witness, who subscribed it,
he must be called to prove the due execution of it
by the party, whom it purports to bind. If the wit-
ess be dead, or out of the country, the handwriting
of the witness must be proved by some person ac-
quainted with it, and then it will be presumed, that
the witness saw the due execution of it; and it is
evidence without further proof. If there is no wit-
ess who subscribed it, the handwriting of the party
who executed it may be proved by any person who
are not sufficient to prove it by comparison of the handwriting with the known
handwriting of the party, though such evi-
dence may be admitted in some cases as corrobora-
tive evidence. And it has been held, that in case of
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Deeds, even the admission of the party, that it is his deed, or that he executed it, is not, at least where there is a subscribing witness, proof of the due execution of it. If the instrument is lost, upon proof of the writing and of its contents (but may be sworn to prove the loss), the contents of it may be established by a copy or other proper proof. After an instrument has been executed thirty years, and any possession has followed, or right been exercised in conformity to it, it is admissible without any proof by writ or acknowledgment, to and against evidence, a question often occurs, how far parole (oral) evidence is admissible to control or affect it. There are two sorts of ambiguities affecting written instruments. One is called latent ambiguity, and the other patent ambiguity. The latter is such as appears upon the face of the instrument itself, from the doubtful nature of the terms used. The former is where the terms of the instrument are of themselves certain and free from doubt; but the ambiguity arises from some extrinsic matter or fact, collateral to the instrument. As, for instance, if A grant his manor in B to C, and then, by an instrument, assigns the same to D, it is a matter to be shown whether the words "B to C" be intended to be a grant or only a voluntary indenture, or as to the particular grant itself, but from the extrinsic fact that he has two manors; for, if he had but one, that would surely pass. If A devise an estate to his nephew B, and he has no such nephew, but he has a nephew C, there is the same latent ambiguity. In each of these cases, and indeed in any cases of latent ambiguity, parole evidence is admissible to show what or who was intended; for as the difficulty arises from parole evidence, that may also be resorted to in order to remove it. But in cases of patent ambiguity, it is otherwise. Parole evidence cannot be admitted to supply a meaning which the words do not, or to control the import, or to give certainty, where the words are uncertain. Indeed, the general rule in our law is, that no parole evidence is admissible to vary, explain, or control written instruments, to add new terms to them, or to limit or restrain the import of the words used in them. The ground of this rule is the general insecurity, which would arise from allowing the deliberate acts of parties in writing to be controlled by evidence so variable, and subject to so much doubt, as that is, which depends upon the recollection of witnesses. Written instruments are presumed to be prepared with caution, and deliberate, to avoid the best evidence of what the parties intend, and of all which they intend. There are, however, some exceptions to the rule, founded on general convenience, which illustrate rather than weaken its original propriety. Parole evidence may be admitted to show fraud or illegality in an instrument. So, to show that a deed, though dated on one day, was actually delivered on another; for this does not vary its legal effect, but only shows when it began to operate. So, a custom may be shown, bearing upon the subject matter of a contract and creating an obligation, though not provided for in it, because facts are presumed to be made with a tacit reference to the known customs of the place, and to include the customary obligations and rights, if there is nothing in the contract, which controls the operations of the custom. So, the usages of trade are, for a like reason, admissible, not to supersede, but, in effect, to explain the real intention of the parties. So, in certain cases, courts of equity will allow parole evidence to establish a mistake in a written instrument; but this they do only upon the clearest proofs in an adverse case, when the mistake operates in fact as a fraud on the party, and it is necessary to establish the instrument, such as charters, where there is some ambiguity in the words, a long course of practice under them is considered as good proof of the true original exposition of them; and parole evidence for this purpose is admissible; for though the words are now uncertain, they may have been certain in the age when they were used; and the parties, by their long notices, were used to look to and depend upon them. In all such cases it is the object of judicial tribunals, as far as they may, to uphold rather than defeat instruments. There are, also, certain cases, in which express statute provisions exist, prohibiting any but written proof of latent contract. In the Roman law, the principal statute on this subject is commonly called the statute of frauds, from its object being to suppress frauds. Among the contracts embraced in this statute are contracts for the sale of lands or interests in lands; contracts for the sale of goods above a certain value, as in England above £10; contracts to become answerable for the debt, default, or miscarriage of another person; contracts to bind executors and administrators to answer damages out of their own estates; and contracts, which are not to be performed within the space of a year after they are made. Probably, in England, there has been pointed out some express provisions of a like nature, by which a written contract is made indispensable to create a legal obligation.

We will close this outline of some of the leading principles of our law on this subject with an enumeration of a few such cases, which, in some degree, remain partly fable, or under any former head. 1. On whom the burden of proof (onus probandi) lies. Generally it rests on the party, who alleges the affirmative of any proposition, to establish it by suitable proof. But sometimes even he, who alleges a negative, must prove it; as, in all cases where the party sets up a criminal neglect or omission, he must establish such neglect or omission by suitable proof; and it is not the duty of the party charged to establish his innocence, for the law will presume it in his favor, until there is some proof to the contrary. 2. The best evidence that the nature of the case admits, is to be produced. The meaning of this rule is not, that, in all cases, the highest possible evidence is to be adduced; but such evidence as presupposes that no better is behind, and in the power of the party. The evidence, for instance, of a written contract is the original instrument; and, therefore, a copy is not generally admissible. But if the original is proved to be lost, then a copy is evidence; for that is the next best proof. In such case, the copy must be proved to be such. Again, oral evidence will not be admitted if there is a copy in existence; but if there is no copy, then it is admissible. But where the best evidence is given, it is not necessary to fortify it by producing all that exists of the same kind. As if there be two witnesses to a deed, it is sufficient to prove it by one. There are certain exceptions to this rule, founded on public considerations. As, for instance, the original of a public record need not be produced; but a copy is sufficient; for the public records ought, for general convenience and preservation, to remain always in one place. So public officers, acting under written commissions, need not show them; but their acting as officers publicly is evidence, prior facti, of their authority; for it would be criminal so to act without authority. So, where the facts lie are immediately in the power of the party, or his agent, or counsel of him—as if a person act as collector of taxes, or as a clergyman in orders—that is sufficient evidence for third persons to establish his official character. 3. Generally, facts only are evidence, and not the mere opinions of witnesses. So, in relation to evidence. But there are certain exceptions; as, in questions of science or some other species of skill may be asked their opinions. A physician may be asked if a particular wound or injury would, in
his opinion, produce death; and a shipwright, his opinion as to the sea-worthiness of a ship. 4. The
surmise out of any particular point of issue of any
need be proved. This gives rise to a great variety of
questions, as to the materiality or immateriality of
particular circumstances, included in the point at
issue; and upon these questions depends the doctrine
of variance in our law. What variance is or is not
material, is often matter of great nicety. There may
be a variance out of any proof of a date, or of some words
of a contract, or of the time and place of making it,
or, of some other circumstance. But a discussion of
this subject cannot be had here without occupying
too much space. 5. There are certain things, which
courts and judges will judicially take notice of with-
out any proof. They will take notice of all public
and general laws; of all general customs of the
realm; of the commencement and prorogation of the
sessions of the legislature; of the king, president,
governor, &c., of the state; of all the courts of
general jurisdiction in the same state; of the general
customs of merchants and trade; of the ordinary
computations of time by the calendar; of the known
civil divisions of the country into counties; of public
holidays and festivals; of public proclamations, and
other public documents of the executive and legisla-
tive departments; of the nations with which we are
at peace or at war; of the nations and sovereigns
acquired by our government; and of many other
facts, which belong to the public proceedings
and interests of the country. But of inferior courts
of limited jurisdiction, not recognised in public sta-
tutes, of local customs and usages, of foreign laws,
of peculiar tenures, and, in many instances, of local
governmental divisions, not necessarily involved, in
the discharge of public duties, judges and courts will
not take notice.
EVOLUTIONS, in tactics, are the movements of a
troop, for practice, or in the face of the enemy.
They comprehend the formation of columns, marches,
&c. (See Maneuver.) The movements of a fleet at
sea are also called evolutions.

EVOLVENTS, in mathematics: curved lines,
formed by the evolution of curves.

EVREMOND, or EVREMONT (Charles Mar-
guetel de St Denis), lord of St; born in 1613, at
St Denis le Goust; one of the most lively writers of
his time; he least attached to abstract con-
cclusions than to the philosophy of social life.
He studied law, but subsequently entered the military
service, was present at Nordlingen and Freiburg,
with the rank of captain, and, in the war of the
Spanish succession, was created field-marshall.
In society, he was distinguished for his wit and penetra-
tion, and retained all his vivacity till his death. He
was eminent among the epicurean wits of that time,
who soon acquired a powerful influence on French
philosophy. For some indiscreitions in his conduct
and in his writings, he was imprisoned in the Bastile.
He afterwards escaped a second arrest only by a
fitter to the former. He died in 1703. His Eléments de mé-
des appeared at Paris, in 1690, in 2 vols. 4to, and
at Amsterdam, in 1706, 5 vols. 12mo, and in 1750,
12 vols. 12mo. In the most of his works, grace,
ease, and vivacity, are the prevailing features. Pro-
found views are rarely met with in them.

EWALD, John, one of the most original Danish
poets, was born at Copenhagen in 1748, and
was educated in Sleswig, where his father
was a preacher. The legends of the saints, which
were given him to read, inflamed his imagination.
The lot of a missionary, compelled to undergo in-
umerable toils in the remotest parts of the earth,
among heathens and barbarians, excited his spirit;
but the perusal of Robinson Crusoe took such a strong
hold of him, that he fled from his father's house in
the search of a delicious life. This step only increased
the severity of his father, who began to make a theologian of his son, sent him to Copenhagen.
The constraint imposed on his inclinations, which
were fixed on the military profession, now be-
came intolerable to the young man; he ran away a
second time, and enlisted in the Prussian service at
Hamburg. But being compelled to join the regiment
of artillery at Magdeburg, instead of being attached
to the hussars, as he had been promised, he deserted
the Prussian standard, in the seven years' war, and
entered the Austrian service, where he was not only
better treated, but, having distinguished himself on
several occasions, was promised promotion, on con-
dition of embracing the Catholic religion. This
Ewald refused; and, being liberated by his family,
he returned to Copenhagen. He now began to
apply himself seriously to theology. But a disap-
pointment in love again interrupted his career; the
world and life became odious to him, and he sunk
into despondency. He was then twenty-three years
old, and was unconscious of the talent slumbering
within him. An accident kindled the flame. On
the death of Frederic V. of Denmark, he was
requested to compose an elegy; and the general
admiration with which it was received roused the
ambition of the young author. He was invited by
the academy of Copenhagen, protected by Bernstorff
and Karstens, and assisted with the advice of Klop-
stock, then residing in Copenhagen, made rapid pro-
gress in his new career, and soon became one of the
most eminent lyric and tragic poets of his nation.
His Death of Balder, the subject of which is taken
from the mythology of the Adda, and his Rolf, a
tragedy taken from the ancient history of Denmark,
are works which, notwithstanding many defects,
bear the impress of true genius; and several of his odes
and elegies are among the best that modern times
have produced. The assistance which he received
from the government was always insufficient for his
support, and he was obliged to earn a trifling addition
by occasional poems. Ewald died in poverty, in
1781, scarcely thirty-eight years old, having struggled
for years with want, and suffering from the gout,
which was produced by his irregular manner of life.
A beautiful portrait of him, painted by Greuze,
soon after his death, in four volumes. For further information
respecting him, see Fürst's Briefe über die Danische
Literatur.

EWALD, John Lewis, doctor of divinity, and
ecclesiastical counselor, was born in 1748, in
the small village of Hayn der drei Eichen (of the
Three Oaks), in the principality of Isenburg. After
he had finished his studies and acted some time as an
instructor, his lord, the prince of Isenburg, appointed
him preacher in Offenbach. Subsequently, he received
an invitation to Detmold, in Lippe, where he remained
till 1781. Having found the schools in a bad state,
he established a seminary for the education of teachers,
and did much for the improvement of schools in general.
In those times of democracy (1792), he published a small
essay, Was solute der Adel jetzt thun? What shall the
Nobility do now?) in which he advised them to surren-
der many privileges, which ought to have been given up
long before. In 1796, he accepted the office of minister
in Bremen, and was consequently elected. He was made
doctor of divinity by the theological faculty in Marburg.
In Bremen, also, finding the schools in a miserable state, he introduced many improvements in them, and rendered other important
services to the city. After preaching there seven
years, finding himself more and more engaged in
discoursing in the large and frequently crowded
church, he accepted, in 1804, an invitation to Heidel-
berg, as professor of morals. After two years, he
was invited to Go Carlisle (1807), where he died, March
19, 1822. Besides his devotional works, he published,
a periodical called Urania, and, for several years, a
Christliche Monatschrift, with several other works.
His works may, perhaps, amount to 100 vols. Many
of them have passed through three or four editions;
a large part have been translated into Dutch, and some into
French.
EWING, JOHN, an eminent American divine and
mathematician, was born in Cecil county, Maryland,
June 22, 1732. His favourite study, from his early
years, was mathematics. In 1754, he joined the
senior class at Princeton college, where he officiated,
also, as a teacher of the grammar school. He was
graduated with his class in 1756, and was appointed
a tutor in the college. Having resolved to study
divinity, he returned to Maryland, and was licensed
to preach, after finishing his course, by the presby-
tery of Newcastle, Delaware. At the age of twenty-
six, Mr Ewing was selected to instruct the philosophi-
cal class of the university of Pennsylvania, and there he
formed an acquaintance with some distinguished men of
science. In Scotland, Glasgow, Montrose, Dundee,
and Perth presented him with their freedom, and the
university of Edinburgh conferred on him the degree
of doctor of divinity. In London, lord North, then
prime minister, held frequent conferences with him,
respecting the dissensions between the colonies and
the mother country. It is related that he overcame
the prejudices and conciliated the favour of doctor
Samuel Johnson, by his agreeable address and
collegial powers. Doctor Ewing returned to his
native land in the year 1775. Four years after, he
accepted the station of provost of the university of
Pennsylvania, which he filled until his death. He
became vice-president of the American philosophical
society, to whose Transactions he contributed several
valuable memoirs. He made important additions to
the astronomical articles in the American edition of the
Encyclopaedia Britannica, and in the National
dictionary as a mathematician caused him to be chosen one of
the commissioners to run the boundary line of the state
of Delaware, and to settle the boundary lines between
the states of Massachusetts and Connecticut, and
between Pennsylvania and Virginia. Doctor Ewing
died, September 8, 1802, in the 71st year of his age,
universally respected for his virtues and knowledge.

EXANTHEMATA (eruptions); diseases of the
skin, joined with fever, hence called acute, hot eru-
ptions, to distinguish them from chronic eruptions,
which are only incidentally accompanied with fever
(called, in medical language, impetigines). They
include the smallpox, measels, mumps, &c.,
&c. Each has its peculiarities, relating to the
manner of its origin, to the form and position of
the eruptions, and to the continuance of the disorder.
See Small Pox, &c.

EXARCHATE. When Nurses, the general of
Justianian, emperor of the East, hastened to the
Goths to aid them in their battles in Italy (552—554),
Justianian formed the middle part of Italy into a province
of the Eastern empire, and gave the govern-
ment of it to an officer called an exarch. Albitius,
king of the Lombards, conquered Ravenna and the
whole exarchate (728); but Pepin, king of the Franks,
deprived him of it in 755, and bestowed it on the

pope, Stephen III. Since this time, Ravenna and its
territory have remained united to the papal dominions.
Among the modern Greeks, an exarch is a deputy of
the patriarchs also in the provinces, and visits the
bishops and churches.

EX CATHEDRA (Lat.; ex, from, and cathedra,
from the Greek καθήδρα, chair); a phrase used in
speaking of the solemn dictates or decisions of pre-
lates, chiefly the popes, delivered in their pontifical
apostolic capacity. Hence, in common language, the phrase
is used for any decision, direction, order, &c.,
with an air of official authority.

EXCAVATIONS. The history of the regular
explorations under ground, for the ancient remains
of Roman art, begins with the edict of pope Leo X.,
August 27, 1515, appointing Raphael Sanazio super-
intendent of antiquities. The words of this edict,
and, still more, a report to Leo X., formerly ascribed
to count Castiglione, but afterwards acknowledged
by Francesconi as the production of Raphael, give
the clearest proof of the truly barbarian spirit with
which the specimens of antiquity had been treated
in Rome. By similar excavations and the example of
Raphael, order was introduced into the midst of this
confusion. (See an account of his services in Fior-
illo's History of Painting, i. 98; and Roscoe's Life
of Leo X., chapter 22.) But the ground was still
too rich to allow a regular and systematic search to
take the place of the indiscriminate, collection
of curiosities. Flam. Varec's excellent Comun. de Mon-
umentis Romanis suo et Majorum Aevi Deprehensione,
1594, of which Carlo Fea has given an improved
edition, in his Miscellanea filologica, critica, et anti-
quaria (Rome, 1790, vol. 1., page 51 et seq.),
is therefore rather an account of accidental discoveries,
than of regular investigation.

The business of excavation was not carried on ex-
tensively in Rome until recently. Before this only a
few tombs (those of Nasso, Scipio, &c.,) and some
vineyards had been opened. During the government
of the French in Italy, the baths of Titus, the arena
of the coliseum, the arch of Constantine, and the
forum of Trajan, were laid open, either in whole or
in part; and the excavations of the via sacra, of the
ground around the temple of peace, and the columns
of Phocas were begun, and have been carried on by
the direction of the existing government, with a view
of clearing the ancient forum entirely from the ruins
of centuries. The first important work was that of
the Arch of Titus, 1737; the first mile stone, from which all those upon the high-
ways leading from Rome were numbered. In the
Campagna di Roma, the villa of Adrian early a-
tracted attention. The excavations at Gabii (1792)
are also celebrated. Those at Veia, at Ostia, under
the direction of Fea, those at Antium, as well as the
excavations at Orticolli and at Frili, near Udine
(1817), have always been productive. Several sta-
tuses of the muses have lately been found, not far
from Monte Calvo, in the Sabine territory; and, in
1826, a temple of Hercules, with statues, was acci-
den tally discovered at Brescia. The discoveries at
Herculaneum and Pompeii (see those articles) have
been very successful. The resurrection, as it were, of those cities, has
encouraged the zeal of all countries.

In France, the example of Peiresc has shown anti-
quarians how well that country can reward a diligent
search. M. de Cussac, Carlin, &c., and M. Milin,
have followed in his steps. In the official reports of
the institute, accounts have frequently been given of
the discovery of old cities and buildings; for example,
of those at Fâmers, where vases have been found,
with several thousand pieces of money, and two
bathing-rooms, with painted walls. In Hungary, the
excavations at Sabaré, and, in Germany, those on the
EXCELLENCY—EXCISE.

Rilue, those near Alzey, and those at Brisgau (see Brisgau), and in several other places, are important. Spain appears to have taken no steps to decide whether its soil contains copper. The Mosaic of the ancient Italicus was discovered by accident. Pietro della Valle was one of the earliest travellers who made excavations for curiosities in Egypt. In these latter times, no stranger goes there without an axe and spade. Syria has been less explored. At Persepolis and Tadmor there are ruins that have been often described, but their size and number have been less noticed. The tombs at Urim were opened by count Chéseul-Gouffier, at the same time that Hamilton was examining those of Magna Graecia. The later travellers in Greece—Nointel, Spon, and Wheeler—appear to have been unable to obtain any thing beyond drawings. Of late years, the Turks have allowed regular excavations to be made in the neighbourhood of ruined edifices. The most important discovery made there was that of the Aegean statues of Panhellenic Jupiter, and some specimens of architecture from Phigalia. Comparative specimens of ancient art have been found in Sicily. Baron Gis-<image>day, who caused a whole tract of land (Acre) to be excavated; but only a few utensils rewarded his search.

While, Greece, Italy, Asia Minor, and Egypt, and even distant India, have been explored, by travellers devoted to the arts, the people of the north of Europe have not been satisfied with waiting till accident should discover to them the remains of ancient times. In the Netherlands, a wooden bridge, evidently the work of the Romans, was discovered in a marsh; at Salzburg, the old Juuvium; at Bonn, and at Neuwied, some monuments of Roman power. Even the old town of Winfried was not neglected, and the pagan monuments in Silesia were examined. Very recently, the late emperor Alexander caused the remains of past ages, all along the Black sea, and in Taurida, to be examined by the antiquarian Von Kohler, and those which could not be removed to be exactly measured and described. Thus both north and south are making similar exertions. Among late excavations of great interest are those on the estate of the prince of Canino, where Etruscan vases were found, in 1830, apparently of very remote antiquity. (See Etruria.) Very recently excavations have been made on the site of the ancient Postum, which have led to the discovery of a vast temple, with sculptures of the greatest interest. They are particularly described in the Paris Journal des Débats, of July 5, 1830.

EXCELLENCY; a title first given to the Lombard kings, and afterwards assumed by several emperors of the West; for instance, Charlemagne, Conrad I., Frederic I., &c. It was afterwards transferred to the inferior princes, especially in Italy, until they also gave it up, after pope Urban VIII., in 1630, had bestowed the title of eminence on the cardinals. The princes now assumed that of highness; the more readily because some ambassadors of the first rank, at Rome, had already adopted the title. Since the rise of the title of excellency has become a title of office or service, in no case hereditary, or transferable from one member of a family to another, but always belonging to the office, and only borne, on the European continent, by ministers in actual service, by the highest court and military dignitaries, and by ambassadors and plenipotentiaries. Foreign ministers are addressed by title of grace, excellency, by way of courtesy, even if they have no rank which entitles them to this distinction; but chargés d'affaires never receive this title. Governors of English colonies are also called excellency. In the United States, the governor of Massachusetts is the only one who has the title of excellency by a consti-
tutional provision. The president of the United States is sometimes spoken of in foreign papers as his excellency the president. We have seen that the title was at first given to emperors; at present, the lower classes in Italy call every foreigner, with a whole coat, eccellenza.

EXCEPTION, LAWS OF. See Laws of Exception.

EXCHANGE. See Bill of Exchange.

EXCHEQUER. An ancient court of record, established by William the Conqueror, and intended principally to order the revenues of the crown, and to recover the king's debts and duties. The court consists of two divisions, viz., the receipt of the exchequer, which manages the royal revenue, and the judicial, which is subdivided into a court of equity, and a court of common law. See Courts of Law (England.)

EXCISE may be said to be an inland duty, or im- post, laid on commodities consumed, or on the retail, which is the last stage before consumption, as an excise on coffee, soap, and candles, which a man consumes in his own house, are excised at the manufactories. As, however, in few countries the definitions of excise, impost, custom, &c., are scientifically settled, it is almost impossible to give a satisfactory explanation of excise applicable to all countries. Excise is either general, extending to all commodities, or particular, levied only on certain articles of consumption. The latter sort. was introduced into Saxony, at the diet of Leipsic, as early as 1438, and extended in 1440, at the diet of Grimma; but a perfect system of general excise was first devised in France, and thence introduced into Holland, soon after it had assumed a republican form of government; into the state of Brandenburg, under the reign of the elector Frederic William the Great; and into Saxony in the beginning of the eighteenth century.

Excise duties were introduced into England by the Long Parliament in 1643; being then laid on the makers and venders of ale, beer, cider, and perry. The royalists soon after followed the example of the republicans; both sides declaring that the excise should be continued no longer than the termination of the war. But it was found too productive a source of revenue to be again relinquished; and when the nation had been accustomed to it for a few years, and the excise collected on a large scale, the "impost of the excise was the most easy and indifferently levy that could be laid upon the people." It was placed on a new footing at the Restoration; and notwithstanding Mr Justice Blackstone says, that "from its first original to the present time its very name has been odious to the people of England"—(Com. book i. c. 3.)—it has continued progressively to gain ground; and at this moment imposed on a variety of most important articles, and furnishes nearly half the entire public revenue of the kingdom.

The laws with respect to the general management of the excise were consolidated by the 7 and 8 Geo. IV. c. 53., from which the following particulars are selected:—Four commissioners constitute a Board. They are to be subject, in all things relating to their peculiar duty, to the orders of the treasury. They may appoint collectors and other subordinate officers, and give to such salaries and allowances as the Treasury shall direct; but they are not allowed to increase the number of inferior officers without the permission and approval of the treasury. No member of the house of commons can be a commissioner of excise. No officer of excise is to vote or interfere at any election of a member of parliament, under pain of forfeiting £500, and being rendered
EXCOMMUNICATION—EXECUTION.

Incapable of ever holding any office or place of trust under his majesty. No person holding any office of excise is to do in any sort of goods subject to the excise laws. Any person bribing or endeavoring to bribe any officer of excise shall forfeit £500; and every officer accepting such bribe, or doing, conniving at, or permitting any act or thing whereby any of the provisions of the excise laws may be evaded or broken, shall forfeit £500, and be declared incapable of ever holding excommunicating majesty in any capacity whatever. But if any of the parties to such illegal transactions shall inform against the other, before any proceedings thereupon shall have been instituted, he shall be indemnified against the penalties and disabilities imposed for such offences. It is lawful for any officer to enter any building or other place, used for carrying on any trade subject to the excise, either by night or by day, (but if by night, in the presence of a constable or peace officer), to inspect the same, &c. And upon an officer making oath that he has cause to suspect that goods mass, partake of the excise acts are deposited in any private house or place, two commissioners of excise, or one justice of the peace, may grant warrant to the officer to enter such house or place, (if in the night, in the presence of a constable,) to search for and seize such forfeited goods. Specimen books may be kept by the officer in his whole, any officer of excise subject to the excise laws; and any one who shall remove or deface such books shall be liable to a penalty of £200. Goods fraudulently removed or secreted, in order to avoid the duty, to be forfeited; and every person assisting in such removal shall forfeit and lose treble the value of such goods, viz., £100, at the discretion of the commissioners. All persons who shall oppose, molest, &c., any officer of excise in the execution of his duty, shall respectively, for every such offence, forfeit £200.

EXCOMMUNICATION; the exclusion of a person from a society, and depriving him of its fellowship; more particularly, the exclusion of a Christian from the church. Some kind of excommunication has existed wherever societies have existed—secular, spiritual, literary, &c. The Jews practised excommunication, viz., an exclusion from communion in the benefits of religious worship with the people. In the Greek church, the act of excommunication was exercised by the whole community, and the power of expelling unworthy members must have been highly necessary in so delicate a situation as that in which the first Christians were placed. By degrees, the right of excommunication became confined to the bishops; and, both in the Greek and Roman Catholic churches, the subject of excommunication became more and more distinctly settled by treaties and decrees. A person excommunicated from the Roman Catholic Church is put out of the communion of the faithful; viz., he cannot hear mass, partake of the Lord's supper, nor attend public prayers, &c.; no one is allowed to have any communication with him except in case of necessity. (Political relations, for instance, may allow such communication; as Francis I. of France always transacted business with the excommunicated Henry VIII. of England. Since the time of pope Gregory IX., there have been two kinds of excommunication in the Roman church—the greater and the less. The former excludes the person from all communion with the faithful, and from the privilege of Christian burial. Subjects were absolved from allegiance to their sovereign, who lay under the greater excommuniation, by the pope being forbidden to obey him. But, in more modern times, many Catholic ecclesiastical writers have maintained that, as an excommunicated private person is not prohibited by civil governments from managing his worldly affairs, so the excommunication of a prince ought not to have any influence on matters of political administration. (See, for instance, the abbé Fleury's Discours sur l'Histoire ecclésiastique, depuis l'An 600 jusqu'à l'An 1200.) Besides, the spirit of the age is such as not to allow an excommunication to have the same influence on the relations between princes and people as in the middle ages. At that time, the pope excommunicated princes and nations, and countries. An excommunication was then considered the heaviest visitation which the country could suffer. All religious services ceased; there was no regular burial, no ringing of the bells, &c. Relics and crucifixes, and all other things which had been full of religious comfort to the believer, were supposed to lose their spiritual power. Gregory V. first pronounced such an excommunication against France in 998, because king Robert would not separate himself from his lawful wife Bertha, who was related to him in the fourth degree. Robert was at last obliged to yield. Still more important was the excommunication issued against England by Innocent III., because king John refused the payment of the tribute called Peter-pence, and the acknowledgment of a right in the pope to confer the investiture of the English bishoprics. The king, was excommunicated, and the powers of government, law, church, and army were all in the hands of the pope. This power of the pope over the English church was called the papal yoke. No country, however, has suffered more from excommunications or interdicts, as these general excommunications of a whole country are called, than Germany. Many of the emperors were excommunicated, and many revolutions produced in consequence. The latest excommunication of a sovereign was that of Napoleon, by Pius VII., in 1809. The lesser excommunication has two effects, viz., exclusion from the sacraments and from ecclesiastical offices. Excommunication cannot be said to have been abolished by the reformation. Luther says, for instance, that a person not receiving the Lord's supper during a whole year, should be separated from the faithful; nothing, however, of the severity of the greater excommunication, and the anathema, is retained. In the states of Germany, however, excommunication is nowhere practised at the present time among the clergy. Excommunication should be thought an undue exercise of power by the clergy, especially as the Protestant sovereigns declare themselves to be the head of the church in their respective countries, and would consider the punishment of their subjects by the clergy under them as an infringement of their prerogatives. In the church of England, both the less and the greater excommunication exist. The less excludes the party from participation in the sacraments, the greater from the company of all Christians. The sentence is attended also with the loss of many civil rights. In Scotland, immoral conduct among the members of most congregations may produce exclusion from church privileges; but this excommunication is not considered as affecting the spiritual welfare of the individual. The Catholics use the phrase fulminating an excommunication, to signify the solemn pronouncing of an excommunication after several admonitions. The ceremonies attending such fulmination are terrible, and do not seem to have been used before the 11th century. The excommunication pronounced in this way is generally called anathema.

EXECUTION, in law, is a judicial writ grounded on a judgment of the court, by which the execution of the judgment is issued, and is granted for the purpose of carrying the judgment into effect, being an order in the name of the supreme power of the state, or the executive branch of the government, attested by the court, to
EXECUTION—EXEQUIES.

the sheriff, marshal, or other officer, to whom it is directed, to cause the judgment of the court to be executed; as that a debt shall be levied against one party in favour of another; or that a punishment shall be inflicted, which has been awarded after due trial and conviction of the accused. Execution is granted by a court only upon the judgments given by the same court, not upon those pronounced by another; for where satisfaction of a judgment given by one court is sought in another, a trial must be had in such other, and a new judgment there given, on which execution issues. Executions are of various descriptions, according to the kind of satisfaction ordered, as seiza ad satisfaciendis, or an arrest for giving satisfaction, by which the sheriff, &c., is ordered to arrest and imprison the party against which it is issued, until he satisfies a certain debt declared by the judgment to be due, or is otherwise discharged by order of law; a fieri facias, by which it is ordered that the amount of the debt be made of the goods and chattels of the party against which the execution is issued, for the satisfaction of the same; a levari facias, by which the officer is ordered to cause satisfaction of the judgment by a levy on the goods or lands of the debtor; an elegy, by which the judgment is ordered to be satisfied by setting off all the goods and chattels of the debtor, by reprobation, to the creditor, in satisfaction of his debt, whereas, by the levare facias, the goods of the debtor are sold by the officer, and the proceeds in money are paid over to the creditor; and the statute merchant or staple, in England, whereby execution issues upon an acknowledgment by the debtor, with certain forms before the bailiff, and a record of proof, that he is indebted in a certain amount to the creditor; this is, in fact, obtaining a judgment for the debt before it is due, so that, on its becoming due, execution issues immediately without trial. The order issuing to an officer to execute a judgment given on an indictment, varies according to the penalty inflicted by the law for the crime or delinquency of which the party is convicted.

EXECUTION. See Capital Punishment.

EXECUTOR, in law, is one appointed by a man's last will, to carry its provisions into execution after the testator's death. The testator may, by the English law, appoint an executor, by his own discretion, though under some legal disabilities, as to contracting and transacting business in general, such as a married woman, or a minor. The duties of executors, and of administrators, are, in general, the same; the difference of the two depending mostly on the mode of appointment, the executor being nominated by the testator, the administrator being appointed by the judge of probate; and often an administrator is appointed to administer upon an estate under a will, as where the testator does not name an executor or where the executor named declines, or where the executor or administrator first assuming the trust has died, or is discharged by the court, where administration is at common law, has once been granted and continued, and, before it is completed, a new appointment is necessary, the person so appointed is called an administrator de bonis non, "with the will annexed," if there be a will. The administrator, with the will annexed, assumes the duties that would have belonged to the executor, if one had been appointed the estate was once granted and continued to act. Though a testator is at liberty to appoint any person to be his executor, with some few exceptions, the judge of probate is restricted, in the appointment of an administrator, whether it be the one on an estate of a person dying intestate, or "with the will annexed," and whether it be the one originally appointed or the one appointed de bonis non; for the widow and nearest of kin to the testator have a right to the appointment, unless they are under some legal disability. The statutes more generally provide, that the nearest of kin of the age of twenty-one shall have the administration, either jointly with the widow, if there be one, or on her declining, or on the death of the other joint administrator. By other statutes on this subject, it is left to the discretion of the judge of probate, of the orphan's court, or of the magistrate, whoever he be, having this jurisdiction, to appoint either the widow or the next of Kin. The principal creditors of the deceased are next entitled to this appointment. But a liberal discretion is left to the judge of probate in all the cases to this appointment. The same judge who appoints the administrator has the power of revoking the appointment.

An executor de son tort, that is, an executor of his own wrong, is one who meddles with the administration of the goods of a person deceased, without any authority so to do, and he is accordingly answerable to the rightful executor, or administrator, when one is appointed. It is the duty of an executor, or administrator, after the will is proved, if the estate is to be administered under a will, to give notice of his appointment, make an inventory of the estate, and return it to the court, and annex, if there be any, of the personal property of the deceased, and see that it is not wasted; to collect the debts due to the estate, and, finally, to distribute the effects or their proceeds among the creditors, until their demands are paid, and then among the heirs and legatees, according to the directions of the will of the deceased, or according to the dispensatory laws, in case of its being the estate of a person dying intestate, or what is called, in the civil law, an estate ab intestato. In collecting the effects and debts, and so in investing the proceeds pending the administration, the executor, or administrator, for the most part, acts according to his own discretion; but in making a distribution of them among the heirs or legatees, he is particularly directed by the judge of probate. In the former case, he accordingly acts at his peril, and is liable, as are also his sureties, for his managing the estate with proper discretion; but in distributing the effects and proceeds, he acts under a judicial decree, and so is secured as to his good faith and mind and will.

EXEGESIS (from the Greek ἐξηγεῖσθαι); the interpretation of the Scriptures. The science which lays down the principles of the art of sacred interpretation, may be called exegetics; though it is also designated by another name, hermeneutics. As the sacred books were composed by authors of a distant age and country, and in foreign languages, it is evident that, in order to understand them, it is necessary to have not only a profound knowledge of the languages, but also a mass of historical, geographical, and antiquarian knowledge; and as the knowledge of Christian doctrine must be drawn from the Scriptures, it follows that the whole study of theology must proceed from exegetics. The most celebrated exegetic authors among the church fathers were Origen, Chrysostom, Theodoret, Diodorus of Tarsus, and Jerome. In the middle ages, when people confined themselves almost exclusively to the Vulgate, or Latin translation, which was in common use, and most of the theological writers were not acquainted with the languages, exegetics was very much neglected. But the study was revived by the reformation, and the last century shows a multitude of eminent exegesis, particularly in the Protestant church, and especially in Germany.

EXEQUIES (funeral rites). In the Catholic church, this ceremony does not involve the idea of internment so much as of solemn masses which are
read (generally for several weeks) for the soul of the deceased. In the exequies of personages of high rank, and especially of princes, funereal monuments are erected. Upon the place of public execution (see Requiem), the church is hung with black, and other ceremonies of a similar nature, are performed.

EXERCISE—EXTRACTION.

EXETER, the capital city of the county of Devon, is situated on the eastern bank of the river Exe, about nine miles north of the English channel, and 170 W.S.W. of London. In consequence of the salubrity of its air, the pleasantness of its situation, and the cheapness of its fish, poultry, &c., it has become the residence of many families of easy but moderate fortune. It was formerly a great emporium of the thinner kinds of woollen goods; but the trade in these has much decayed of late years. The cathedral of Exeter is a magnificent structure, and, having been erected at different periods, exhibits several varieties of the Norman and pointed styles of architecture. The bishopric includes the counties of Devon and Cornwall. Population in 1831, 28,501. Exeter gives the title of many of the families.

EXMOUTH, a small town in Devonshire, 166 miles W.S.W. of London, which has recently become popular as the residence of those suffering under pulmonary complaints. Its population is between 3 and 4,000. It gives the title of Viscount to the local family.

EXHAUSTION. The ancient geometers were entirely unacquainted with the facilities of the higher analysis. The process which they used instead of it, in the comparison of curvilinear figures, curved surfaces, and round bodies, consisted in bringing the magnitudes into relation with others, to which, it is true, they could not be made entirely equal, but yet so nearly equal that the difference is smaller than any assignable quantity. This was called the process of exhaustion. (See Maclaurin, On Fluxions, the introduction of his work). The differential calculus furnishes a much surer and speedier method for attaining the object.

EXHIBITION; a benefaction settled for the benefit of scholars in the universities, that are not on the foundation.

EXILE; a punishment by which a person is compelled to leave the city, province, or even the country, where he has previously resided. It amounts, therefore, to a deprivation of privilege and protection.

It is a punishment for state criminals. The ancient republics sometimes exiled men on mere suspicion that they might become dangerous to republican liberty (by the ostracism). In this case, exile was not a punishment, but a measure of precaution. Many anticipated the sentence of the judges, and went into voluntary exile. (See Deportation. For Babylonian Exile, see Hebrews and Jesus). It does not often happen, at present, that real criminals are exiled, as it is felt to be unjust for one state to let loose offenders upon its neighbours. But it sometimes happens, that persons convicted of minor offenses are banished, on condition of leaving a county or district.

EXORCISM. An opinion prevailed in the ancient church, that certain persons, those particularly who were afflicted with certain diseases, especially madness and epilepsy (q.v.), were possessed by evil spirits. Often such persons formed of conjunctions were pronounced, and this act was called exorcism. There were even certain men who made this a regular profession, and were called exorcists. In the third century, an idea began to prevail that heathens and heretics were possessed by demons, and hence exorcism was joined with the act of baptism. St. Augustine's doctrine of original sin having been adopted by the church in the fifth century, this ceremony was used in the baptism of infants. Luther allowed the custom to be retained; the Calvinistic church early discarded it; many of the Lutheran clergy, even after the strictest scrutiny, also disapproved of it. It continued, however, in the Lutheran church till modern times, although explained, by saying that it was not an expulsion of Satan, but merely an acknowledgment of innate depravity, and of the necessity of redemption. It is now almost universally done away with among Protestants. The Catholic church has ordinary exorcisms, as those used in baptism and in the benediction of the water, and extraordinary ones, those which are used to deliver possessed persons, to abate storms, to kill obnoxious animals, as the vermin which destroy the fruits of the earth. It is by no means, however, an idea which arose in the Christian church. All the ancient pagans (and, probably, we may say all pagans) acknowledged the efficacy of exorcism. The Jews likewise did, and the passages of the New Testament are known to every one, which state, that Christ drove evil spirits out of possessed persons.

EXORCIST. The members of one of the lower orders of Catholic clergy are called by this name. See Deacon.

EXOTHERIC. See Esoteric.

EXOTIC; an appellation for the produce of foreign countries. Exotic plants are such as belong to a soil and climate entirely different from the place where they are raised, and therefore can be preserved for the most part only in green-houses. Exotic plants of the hot climates are very numerous, and require the utmost attention of the gardener. Even if they can be brought to blossom, it is rare that they produce fruit, and still more rare that the seeds ripen. It is only by care and accurate observation of their nature and wants, that some of them can be acclimated, or made to flourish on the foreign soil.

EXPLANATION, in physics, is the enlargement or increase in the bulk of bodies, in consequence of a change in their temperature. (See Caloric.) This is one of the most general effects of heat, being common to all bodies whatever, whether solid or fluid. The expansion of solid bodies is determined by the pyrometer, and that of fluids by the thermometer (see these articles). The expansion of fluids varies considerably, but, in general, the denser the fluid, the less the expansion; thus water expands more than mercury, and spirits of wine more than water; and, commonly, the greater the heat, the greater the expansion; but this is not universal, for there are cases in which expansion is produced, not by an increase, but by a diminution of temperature. Water furnishes us with the most remarkable instance of this kind. Its maximum of density corresponds with 4°.5 of Fahrenheit's thermometer; when cooled down below 4°.5, it undergoes an expansion for every degree of the temperature which it loses; and at 32°, the expansion amounts to four sevenths of the whole expansion which water undergoes when heated from 4°.5 to 212°. With this more recent experiments coincide very nearly; for, by cooling 100,000 parts in bulk of water from 4°.5 to 32°, they were converted to 13,000 parts. The density of water is the same for any number of degrees above or below the maximum of density. Thus, if we heat water 10° above 42°.5, it occupies precisely the same bulk as it does when cooled down to 10 degrees below 42°.5. Therefore the density of water at 32° and at 53° is precisely the same. Water cooled to the temperature of 5° without freezing, or 37° below the maximum point of density; and,
EX PARTE.—EXPLOSION.

during the whole of that range, its bulk precisely corresponded with the bulk of water the same number of degrees of temperature, with which water expands in the act of freezing, is shown by glass bottles filled with water, which are commonly broken in pieces when the water freezes. A brass globe, whose cavity is an inch in diameter, may be burst by filling it with water and freezing it; and the force necessary for this effect is 27,720 pounds weight. The expansive force of freezing water may be explained by supposing it the consequence of a tendency which water, in consolidating, is observed to have to arrange its particles in one determinate manner, so as to form prismatic crystals, crossing each other at angles of 120° and 120°. The force with which they arrange themselves in this manner must be enormous, since it enables small quantities of water to overcome so great mechanical pressures. This observation is conspicuously illustrated by observing the crystals of ice on a piece of water exposed to the action of the air in frosty weather; or upon a pane of glass in a window of a room, without a fire, at the same season. Various methods have been tried to ascertain the specific gravity of ice at 32°; that which succeeded best was to dilute spirits of wine with water till a mass of solid ice put into it remained in any part of the liquid without either sinking or rising. The specific gravity of such a liquid is 0.92, which, of course, is the specific gravity of ice, supposing the specific gravity of water at 60° to be 1. This is an expansion much greater than water experiences even when heated to 212°, its boiling point. We see from this that water, when converted into ice, no longer observes that equable expansion measured by Dalton, but undergoes a very rapid and considerable augmentation of bulk.

EX PARTE; a term used in the court of chancery, when a commission is taken out and executed by one side or party only, upon the other party's negotiating or refusing to join therein.

EXPECTATION, in the doctrine of chances, is the value of any prospect of prize or property depending upon the happening of some uncertain event, the value of which, in all cases, is equal to the whole sum multiplied by the probability that the event on which it depends may happen.

Expectation of life amnuities, denotes the time which a person of a given age may expect to live. Simpson's table of the expectation of life, in London, is as follows:—

<table>
<thead>
<tr>
<th>Age</th>
<th>Expectancy</th>
<th>Actuarial Expectancy</th>
<th>Expectancy of a Year</th>
<th>Expectancy of a Dollar of Annuities</th>
</tr>
</thead>
<tbody>
<tr>
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<td>26.3</td>
<td>26.3</td>
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</tr>
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<td>20.4</td>
<td>20.4</td>
<td>20.4</td>
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</tr>
</tbody>
</table>

From this table, the expectation of life, at any age, is found, on inspection, thus: a person of 20 years of age has an expectation of living 28.9 years; and in the same manner may be found the expectation at any other age. See Annuities.

EXPECTORANTS, in pharmacy; medicines which promote expectoration. Such are the stimulating gums and resins, squills, &c.

EXPLOSION; the act of evacuating, or bringing up phlegm, or other matters, out of the trachea and lungs, by coughing, &c.

EXPEDITIONS TO THE NORTH POLE. See North Pole.

EXPERIMENTAL PHILOSOPHY is that which deduces the laws of nature, the properties and powers of bodies, and their actions upon each other, from sensible experiments and observations. In our inquiries into nature, we are to be guided by those rules and maxims which are found genuine, and consonant to a just method of physical reasoning; and these rules were, by Sir Isaac Newton, reckoned four, viz. 1. more causes of natural things are not to be admitted than are true, and sufficient to explain the phenomena; 2. for nature is simple, and does nothing in vain. Therefore, of natural effects of the same kind, the same causes are to be assigned, as far as it can be done; 3. as of respiration in man and beasts, of the descent of stones in Europe and America, of light in a culinary fire and in the sun, and of the reflection of light in the earth and the other planets. 3. The qualities of natural bodies, which cannot be increased or diminished, and agree to all bodies, on which experiments can be made, are to be reckoned as the qualities of all bodies whatever; thus, because extension, divisibility, hardness, impermeability, mobility, the win inertiae, and gravity, are found in all bodies under our inspection, we may conclude that they belong to all bodies whatever, and are the original and universal properties of them. 4. In experimental philosophy, propositions collected from the phenomena by induction, are to be deemed (notwithstanding contrary hypotheses) either exactly, or very nearly true, till other phenomena occur, by which they may be rendered more accurate, or liable to exception. This ought to be done, lest arguments of induction should be destroyed by hypotheses, and logical series be superseded by conjectures.

EXPLORATOR; a contrivance, invented by Beccaria, consisting of a wire, whose insulated ends, provided with knobs of tin, are fastened to a pole over the chimney, or to the top of a tree. From this wire, another leads into a chamber, through a glass tube, covered with sealing-wax, communicating in the chamber, with an electrometer, by which the electricity of the air may be daily observed.

EXPLOSION, in natural philosophy; a sudden and violent expansion of an aerial or other elastic fluid, by which it instantly throws off all obstacle in its way. Explosion differs from expansion in this,—that the latter is a gradual power, acting uniformly for some time, whereas the former is momentary. The expansions of solid substances do not terminate in violent explosions, on account of their slowness, and the small space through which the expanding substance moves. Thus we find, that, through wedges of wood, heretofore, well cleaved solid blocks of stone, they never throw them to any distance, as gunpowder does. On the other hand, it is seldom that the expansion of any elastic fluid bursts a solid substance, without throwing the fragments of it to a considerable distance. The reasons of this may be comprised in the following particulars: 1. The immense velocity with which the aerial fluids expand, when affected by a considerable degree of heat. 2. Their celerity in acquiring heat, and being affected by it, which is much superior to that of solid substances. Thus air, heated as much as iron when brought to a white heat, is expanded to 2000 times its bulk, but the metal itself will not be expanded the 500th part of that space. In the case of gunpowder, the velocity with
which the flame moves is calculated, by Mr Robins, to be no less than 7000 feet in a second, or little less than 70 miles per minute. Hence the impulse of the fluid is inconceivably great, and the violence on which it strikes are carried off with vast velocity, though much less than that just mentioned; for a cannon-ball, with the greatest charge of powder, does not move at a greater rate than 2400 feet per second, or little more than 27 miles per minute. The velocity of the fluid is so enormous as to expend the large proportion of the heat through the whole body of the air, as soon as it is extricated from the materials of which the gunpowder is made, so that it is enabled to strike all at once, and thus greatly to augment the movements of the ball. We may conclude, upon these principles, that the force of an explosion depends, 1. on the quantity of elastic fluid to be expended; 2. on the velocity it acquires by a certain degree of heat; and, 3. on the celerity with which the degree of heat affects the whole of the expansible fluid. These three take place in the greatest perfection where the electric fluid is concerned, as in lightning, earthquakes, and volcanoes.

EXPONENT, in mathematics, is the index of a root or power. For instance, if a quantity is multiplied by itself any number of times, instead of repeating the factor so many times, we place it over, on the right, a figure denoting how often the number or magnitude has been multiplied by itself; e. g.

\[ a^4 = aaa = a \times a \times a \times a \]

\[ 9^2 = 9 \times 9 = 9 \times 9 = 81 \]

EX POST FACTO, in law; something done after another; thus a law is said to be ee post facto, when it is enacted to punish an offence committed before the passing of the law—a violation of the plainest principles of justice.

EXPRESSED OILS, in chemistry, are those which are obtained from bodies only by pressing, to distinguish them from animal and essential oils, which last are, for the most part, obtained by distillation.

EXTENSION, in philosophy; one of the common and essential properties of body, or that by which it possesses or takes up some part of universal space.

EXTRACT, or EXTRACTO (extractum). 1. When chemists use this term, they generally mean the product of an extraction. In chemistry, extraction is the process of taking a part of any substance, or all that part, by means of a liquid, or volatilization. It includes all those preparations from vegetables, which are separated by the agency of various liquids, and afterwards obtained from such solutions, in a solid state, by evaporation of the menstruum. It also includes those substances which are held in solution by the natural juices of fresh plants, as well as those to which some menstruum is added at the time of preparation. Now, such soluble matters are various, and mostly complicated, so that chemical accuracy is not to be looked for in the application of the term. Some chemists, however, have affixed this name to one peculiar modification of vegetable matter, which has been called extractive, or extract, or extractive principle; and, as this forms one constituent part of common extracts, and possesses certain characters, it will be proper to mention such of them as may influence its pharmaceutical relations. The extractive principle has a strong taste, differing in different plants; it is soluble in water, and its solution speedily runs into a state of putrefaction, by which it is destroyed. Repeated evaporations and solutions render it at last insoluble, in consequence of its combination with oxygen from the atmosphere. It is soluble in alcohol, but insoluble in ether. It unites with alumine, and, if boiled with neutral salts thereof, produces an effervescence. It oxidizes with strong acids, and with the oxides from solutions of most metallic salts, especially muriate of tin. It readily unites with alkalies, and forms compounds with them, which are soluble in water. No part, however, of this subject, has been hitherto sufficiently examined. In the preparation of all the extracts, the London Pharmacopoeia requires that the water be evaporated, as speedily as possible, in a broad, shallow dish, by means of a water-bath, until they have acquired a consistence proper for making pills; and, towards the end of the inspissation, that they should be constantly stirred, with a wooden rod. These general rules require minute and accurate attention, more particularly in the immediate evaporation of the solution, whether prepared by expression or decocation, in the manner, as well as the degree, of heat by which it is performed, and the promotion of it by changing the surface by constant stirring, when the liquor begins to thicken, and even by directing a strong current of air over its surface, if it can conveniently be done. It is impossible to regulate the temperature if a naked fire be used; and, to prevent the extract from burning, the use of a water-bath is, therefore, absolutely necessary.

EXTRACTOR, in midwifery; an instrument, or forceps, for extricating children by the head.

EXTRADORS; the outside of an arch of a bridge, vault, &c. See Architecture.

EXTRAVASATION, in contusions, and other accidents of the cranium, is when one or more of the blood-vessels are burst, and the blood is extruded from the interior of the body, and by which there is such a discharge of blood as oppresses the brain, frequently bringing on violent pains, and at length death itself, unless the patient is timely relieved.

EXTREMITIES. This term is applied to the limbs, as distinguishing them from the other divisions of the animal, the head and trunk. The extremities are four in number, divided, in man, into upper and lower; in other animals, into anterior and posterior. Each extremity is divided into four parts; the upper into the shoulder, the arm, the fore-arm, and the hand; the lower into the hip, the thigh, the leg, and the foot.

EXUVIAE, among naturalists, denotes the cast-off parts or coverings of animals, as the skins of serpents, caterpillars, and other insects.

EY, a Scandinavian word, signifying island, and contained in several geographical words, as Anglesey, the island of the Angleseys, and Van Eick, the island of the Van Eickees.

EYCK, HUBERT VAN, a Flemish painter, considered as the founder of the Flemish school, was born in 1366, at Maeseyck. He was much distinguished by his paintings in distemper; and, after the introduction of oil painting by his brother, he practised in that with equal success. An admirable piece of his, in conjunction with his brother, representing the adoration of the Lamb, from the Apocalypse, is preserved in the museum at Paris. It contains three hundred and thirty figures, painted in a hard manner, but with great truth and character. He died in 1426.

EYCK, JOHN VAN (also called Jan van Brugge, or John of Bruges, from Bruges, the place of his residence, as the former was given him from the place of his birth, Maeseyck, in the bishopric of Liege), was the son of a painter, whose family name is not known, and was born, according to some, about 1370; according to others, at the close of the fourteenth century; an opinion favoured by many circumstances. His elder brother, Hubert van Eyck (born about 1368) who was also a celebrated painter in his time, gave him his first instruction in the principles of the art. The talents of this rare genius were so rapidly and vigorously developed, that he soon surpassed his brother, and became the admiration of his own and succeeding ages. Of the history of these brothers we
know the following circumstances. They resided at Bruges, then much frequented by the nobles and the wealthy on account of its flourishing commerce. About 1420, or soon after, they went to Ghent, for a considerable time, to execute together a very large work, which Philip the Good, of Burgundy, who succeeded to the government in 1419, had engaged them to do. This is the celebrated adornation of the Lamb, now in the museum at Paris; a painting, which, in its different parts, contains over three hundred figures, and is a masterpiece. It is painted on wood, with side panels, which contain the portraits of the two artists and of their sister Margaret, likewise a painter, or, as some think, of the wife of John van Eyck. Of these panels, one is at Berlin in the collection of Mr Solly, bought by the Prussian government. This affords the principal argument for the opinion lately stated, that John van Eyck was born twenty or thirty years later than the date (1370) assigned to his birth by Sandrart. For these portraits, which, as well as the whole painting, were executed between 1429 and 1430, represent the elder brother as a man perhaps about sixty—which agrees with the account of his birth—while the other, John, appears as a man of about thirty, which could not have been the case had he been really born as early as 1370. At the brilliant court of Philip, the brothers had the best opportunities of improving their taste by spectacles of splendour of all kinds, dresses, jewels, furniture, arms, banquets, &c. John particularly availed himself of them in his works, in which such objects are represented with remarkable truth. Hubert did not live to see the painting above mentioned completed. He died at Ghent, as did also his sister Margaret. John finished the work, and returned with his wife to Bruges, where he remained till his death, and executed several excellent pieces. The reputation of this celebrated painter became very great even during his lifetime, by his great share in the introduction of oil painting (q. v.); the original invention of which has been incorrectly ascribed to him by many. 

John van Eyck was also of great service to the art by his improvements in linear and aerial perspective, and in painting upon glass. In regard to the first, we will only remark that it was a general custom, before his time, to have for the back ground of the picture a flat gold ground, from which the figures stood out without perspective, as may still be seen in numberless works of earlier date. Van Eyck himself followed this practice in his earlier efforts, but, as he made further advances in his art, conceived the idea towards which there had been hitherto only some distant advances, of giving a more natural grouping and perspective to his figures by a natural back ground. 

In this he succeeded so eminently, as many of his still remaining works prove, that he may be called in this respect the father of modern painting, since he gave the art a new turn and impulse, and laid the foundation of that high degree of improvement which it has since attained in the brightest era of the great masters who succeeded him in the Netherlands and in Italy. In the art of painting on glass he is considered as the author of the mode of painting on whole panes, with colours delicately blended, and yet so firmly fixed that obliteration was impossible—an object before attained only by joining together (in Mosaic) several small portions into one. The influenee of John van Eyck, both as an artist and as an inventor, or rather improver of several branches of the art, was therefore very great. The school of which he was, in some sense, the founder, does not yield in brity to the best contemporary or succeeding artists, although it must be allowed to be often defective in the representation of the extremities of the human body—a fault occasioned by that excessive delicacy which prevented the study of naked forms, and of anatomy in general. On the other hand, the face, dresses, grouping, distribution of light and shade, are always superior, and the colouring brilliant and splendid, in the works of this painter and most of his scholars. Many of his paintings are still preserved, either in churches and museums, or in private collections. Among his scholars are reckoned, besides the nearly contemporary Antonio de Messisa, Roger van Brugge, Hans Hemling, and others, also the later masters, Albert Durer, Luke de Leyden, Hans Holbein, Luke Kranmer, &c. P. Wanger has investigated with care the history of the two brothers in his work entitled Hubert and John van Eyck (Breslau, 1822). 

EYE; the organ of sight, consisting of several parts, so adapted to each other as to answer the purpose of distinct vision when placed in a proper situation with regard to light and shade. The eye, though properly a subject of anatomy, is so connected with the doctrine of vision, that its structure must first be understood before any advances can be made in that theory; and, as such, it becomes a matter of philosophical inquiry, and must not, therefore, be wholly omitted in the present work, although our limits will only admit of a brief illustration of its construction and principal mode of operation. The annexed figure represents a section of the human eye made by a plane, which is perpendicular to the coats which contain its several humours, and also to the nose.

There are four membranes or coats. 1. The sclerotic, a a a a, which envelopes the greater portion of the ball: it is strong; of a light colour; that portion nearest the front, b b, constitutes the white of the eye, and to the other portion are attached the muscles, by which the motions of the ball in its socket are effected. 2d. The cornen, b b, so called from its horny nature—a thin transparent coat attached to the external surface of the sclerotic: it is extremely tough, and consists of several thin layers, so that, by its strength, it may the more perfectly resist external injuries. 3d. The interior surface of the sclerotic coat is lined with a very thin and delicate membrane, which is covered with a black substance, and denominated the choroid coat. 4th. The inner surface of the choroid membrane towards the back part of the ball is covered by a tender net-like membrane called the retina, r r r. This membrane is an extension of the optic nerve O O, which enters the back part of the eye, making a communication between it and the brain. The optic nerve enters the eye about a tenth of an inch nearer to the nose than the axis of the eye. At the back of the eye, in the coat, and at the very centre of the retina, there is a small transparent spot, free of the soft pulpy matter of the retina, having a

* At the same time with him, Pietro della Francesca and Filippo Lippi employed the linear perspective instead of the gold ground, but not in such perfection as he.
yellow margin called the *faroren centrati*. A mem-
brane in the form of a flat ring, *e e*, divides the in-
terior of the eye into two unequal portions, called the an-
terior and posterior chambers. It is called the
seen, or *iris*, and may be seen through the corneal
front of the eye. The portion of this mem-
brane being that coloured ring between the white of the eye and the
dark spot in the centre. This membrane is differ-
ently coloured in different individuals, being blue,
grey, or brown. The circular opening in the centre,
called the *pupil*, may, from the peculiar structure of this
membrane, either increase or diminish in size, in order to regulate the quantity of light
admitted; as in weak light too few rays might be admitted, and the objects be rendered indistinct, and
in a strong light too many might injure the organ.
This remarkable effect, which takes place with
great quickness, is thought to be produced by
means of two sets of muscular fibres, the one set
being circles surrounding the pupil, and the other set
crossing these, converging from the circumfer-
ence of the membrane towards the centre of the
pupil. The space *d* between the iris and cornea, *e e*,
the anterior chamber of the eye, is filled with a thin
layer of the aqueous humour. Immediately behind the *iris* is a transparent capsule or
bag, *e e*, filled by a clear fluid, and suspended by the
iliary processes, *g g*. This is called the *cryst-
talline lens*, immediately behind which is the *vitreous
humour*, *V V*, filling the greater portion of the eyeball.
Such is a general account of the anatomy of the
human eye, regarding its function as an organ of com-
munication between the mind and the external world;
it is not our intention to consider it at any length
in the present article, but this curious and interesting
subject will be fully treated of under our articles
*Evolution* and *Optics*. At present it will suffice to re-
mark, that the eye, considered as an optical instru-
ment, bears a strong resemblance to the *camera ob-
scura* (q. v.). The rays of light proceeding from
any luminous object, and passing through the cor-
nea, are transmitted through the aqueous humour,
and, passing through the pupil, are received by the
crystalline humour, or lens, as it resembles a dou-
ble convex lens, and, collecting the rays, forms an
image of the external object on the retina, which is
an expansion of the optic nerve, and conveys the
impression to the brain.
Blindness and defect of sight may arise from vari-
or causes, chief among which is the transparancy of the corneal,
the crystalline lens, or any of the humours, is destroyed,
either partially or entirely, then will partial or total
blindness follow, since no image can be formed upon the
retina; but, although all the humours and the
coneen are perfectly transparent, and retain their
proper forms, which is likewise necessary to distinct
vision; yet, from weakness, or inactivity of the optic
nerve, weakness of sight or total blindness may en-
sue. To the first class belong those diseases called cat-
aract, ophthalmia, &c; and to the second, amaurosis or
gutta serena, &c. Although a person may not be under
the influence of any of these diseases, yet defective
vision may arise from the crystalline humour being
nearly a double convex, as to form an image before the rays reach the retina; in which case distinct vision will be pro-
cured by interposing a concave lens between the eye
and the object, of such a curvature as shall cause the
rays that pass through the crystalline lens to meet
on the retina. This is the principle on which the short-sighted
persons, but as the crystalline lens becomes more flat-
tened as age advances, this defect is in the course of
years gradually diminished. It is owing to the same
gradual flattening of the crystalline lens that those
whose sight has through the early part of life been
perfect, are obliged, as old age advances, to employ
 convex lenses, in order to correct the different cur-
vature of the crystalline lens, and cause the rays
which would meet behind the retina to meet on it.

The following measure of the crystalline and cor-
nea, were taken for an eye treated in person by Dr Woll-
stons, from the eye of a female above 50 years of age,
a few hours after death.

<table>
<thead>
<tr>
<th>Diameter of the crystalline</th>
<th>Thickness of the crystalline</th>
<th>Diameter of the cornea</th>
<th>Thickness of the cornea</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.378</td>
<td>0.172</td>
<td>6.020</td>
<td>0.044</td>
</tr>
</tbody>
</table>

The measures of the refractive powers of the humours
of the same eye:—

<table>
<thead>
<tr>
<th>Refractive power of water</th>
<th>Ditto, of aqueous humour</th>
<th>Ditto, of vitreous humour</th>
<th>Ditto, of outer coat of crystalline</th>
<th>Ditto, of outer coat of cornea</th>
<th>Ditto, of middle coat of cornea</th>
<th>Ditto, of central part of ditto</th>
<th>Ditto, of the whole crystalline</th>
<th>Ditto, of the whole cornea</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.338</td>
<td>1.336</td>
<td>1.330</td>
<td>1.374</td>
<td>1.376</td>
<td>1.361</td>
<td>1.390</td>
<td>1.363</td>
<td>1.363</td>
</tr>
</tbody>
</table>

The eyes of different species of animals differ consid-
ernably in form and number. All red-blooded
animals have two eyes, but two species; the zemmi,
or blind rat, and the tuplus, or golden mole, are rendered blind by a thin hairy film that covers the
organ. In animals that inhabit the lower regions of the
atmosphere, including those that live near the
surface of the earth, the eye is nearly spherical, the
longest axis being from the cornea to the retina.
In fishes, the fore part of the eyeball is much flat-
tened; in some the eyeball is like a hemisphere, the
anterior part of which is flat, and in others the
superior part is likewise flat; but in birds which
occupy the higher regions of the atmosphere, the
deviation from the spherical form is in the contrary
direction to that of fishes. The aqueous humour is
more abundant in high-flying birds than in animals
near the surface of the earth, and less still in fish,
in which last it is sometimes entirely wanting. The
 crystalline lens is most globular in fishes, and flattest in
birds. The less spherical the form of the eye is, the
stronger is the sclerotic. In the cuttle-fish the cor-
nea is awanting, the iris is of a deep tawny brown
colour; in the mammalia and in birds, it varies from a
bright yellow, red, or clear blue, according to the
species. In fishes it is of a golden or silvery lustre,
and in reptiles it is intermediate in metallic lustre.
The pupil is round in man. In the cat kind it is
formed by two elliptical segments, the opening run-
ning parallel to the direction of the nose. In rumin-
ating animals, the horse and the whale, the opening
runs transversely, on either side of the eyeball in the
form of a slit. The adaptation of peculiar structure in
the eyes of animals to their wants and situations, forms
a striking and interesting branch of physiology.

**Eyes of a Portrait.—** The influence which the as-
sociation of contiguous objects has upon our ideas, is
strikingly exemplified in the eyes of a portrait. We
estimate the direction of the eyes, not only from the
position of the ball in regard to the eyelids, but also
from the relative position of the remaining features
of the face. Dr Wollaston has shown, that the same
eyes in a picture, which looks at us, may be made to
appear averted from us, if we apply new features to
the lower half of the face. The reason why the eyes
of a portrait appear to follow us, in all parts of the
room, is simply, that the relative position of the
features cannot change, so that, if the picture appears
to look at us once, it must appear to look at us
always. If we move to one side of a portrait, the
change which then takes place is, that the part of the
picture which would take place in a bust or living face.
The picture is merely foreshortened, so that we see a
narrower image of a face, but it is still that of a face
looking at us. And if the canvas be transparent, the
same effect takes place from the back of the picture.

**EYE,** in architecture is used to signify any round
EYE—F.

window made in a pediment, an attic, the reins of a vault, or the like.

EYE, in agriculture and gardening, signifies a little bud, or shoot, inserted into a tree by way of graft.

EYE OF A DOMÉ: an aperture at the top of a dome, as that of the Pantheon at Rome, or of St Paul's at London: it is usually covered with a lantern.

EYE OF A TREE: a small pointed knot, to which the leaves stick, and from which the shoots or sprigs proceed.

EYEBRIGHT (Euphrasia officinalis): a small plant belonging to the natural order Scirpeae, which is found in Canada and in the northern parts of Europe. It is annual, from three to eight inches high, often much branched; the leaves ovate and dentate; the flowers axillary and almost sessile; the corolla is monopetalous, white, streaked with purple, and with a yellow spot on the lip. The whole plant has a bitter taste. It formerly enjoyed a great reputation in diseases of the eyes, probably on account of the brilliancy of its flowers.

EYELET HOLES: round holes worked in a sail, to admit a small rope through, chiefly the robs (or rope-hands), and the points or reef-line.

EYELID. The eyelid is the external covering of the eye. It is peculiar adaptation to its proper offices cannot be sufficiently admired. It forms the cover which closes the eye during sleep, when it remains motionless for hours; it serves the purpose of wiping and cleansing the ball of the eye, as well as moistening it by spreading the tears over its surface, for the performance of which offices it is, during the waking hours, in incessant motion. It screens the eye also from excessive light, which might often be injurious or destructive to it. The sympathy between the eye and its lids is very close, as is absolutely necessary to their proper action; and this is so much the case, that in weakness of the nerve of the eye, the smarting, which warns us to close them, is always felt in the lids. Their diseases, like those of the eye, are various, but of minor importance.

EYLAU, PRESS; a small town, about twenty-eight miles distant from Königsberg, in Prussia Proper, with 1500 inhabitants, on the lake of Archen, famous for one of the bloodiest battles on record, fought between Napoleon and the allied Russians and Prussians, on the 7th and 8th of February, 1807. The chief battle was on the 8th, and lasted twelve hours, amid the thunder of 300 cannons. The carnage was increased by a fall of snow, which, by causing the column of Augereau to march too far to the left, and thus fail of their object, caused the battle to be much longer protracted. Augereau himself was wounded, and his corps dissolved and incorporatted with the others, so much had it suffered. Ney and Davoust, who were despatched by the emperor Napoleon to outflank the enemy, at last succeeded, and decided the battle; but the loss on both sides was terrible. Nine Russian generals were wounded; three French generals killed, and five wounded. The Russians killed were estimated at 12,000, by some, only at 7000. The loss of the French was estimated at 42,000 men; their own statements, however, make it much less. So much is certain—that side obtained its object; and had not the young officer despatched by Napoleon with the orders for the battle, &c., to Bernadotte, fallen into the hands of the Russians, there is little doubt that the French would have gained a complete victory. According to Scholl (vii. 405), Napoleon, on February 26 and April 29, offered a separate peace to the king of Prussia; but he concluded a new alliance with Alexander, April 26. The battle of Friedland followed, and the humiliating peace of Tilsit was concluded.

EYEMOUTH, a small town in Berwickshire, Scotland, situated at the mouth of the river Eye. It was at an early period a place of some importance, from its possessing a port of great strength, and from its proprietor, as a Scotch baronet, Lord Sidon. Population of town and parish in 1831, 1181.

EZEKIEL; the third of the great prophets, a son of Buzi, of the race of priests. He was carried away, when young (about 590 B. C.), into the Babylonish captivity. Here he received the gift of prophecy, while he was among other captives, by the river Chebr. He was commanded by God in a vision to speak to the children of Israel, and to watch over his people. In another vision, God revealed to him the sufferings which the Israelites were to undergo for their idolatry. God also revealed to him the end of the captivity, the return of his people, the restoration of the temple and city, and, finally, the union of Judah and Israel under one government, and the return of their former prosperity. He was also miraculously informed of the siege of Jerusalem by the Chaldeans, and communicated the information to his fellow exiles. He prophesied against Egypt, against Tyre and Sidon, against Chaldea, and against Ammonites. His prophecies are divided into forty chapters; they are obscure, full of poetic fire, and were not received into the Jewish canon till a late period. The time and manner of the prophet's death are uncertain.

F is the sixth letter of the English alphabet, and represents the sound produced by bringing the upper teeth against the lower lip, and then breathing with a hissing noise. It therefore belongs to the semi-vowels, and to those which the Germans call Blasenlaut (blowing sounds). This aspiration may be more or less violent. It may even be so soft as to pass over into a mere aspirated h, and is sometimes entirely lost; as the Latin facere, in the pronunciation of Spain, became •acer, and is now pronounced and only a cer. In the same way fundus became fundo (deep). F, in etymology, is altogether an unsettled sound, passing into a, and v, and h, on the one side, and into p on the other, as many letters pronounced with similar organic movements are found to take each other's places in the various mutations of languages. At the beginning of a word, f often does not belong to the root, particularly before r and l; for f is little more than a strong aspirate, and it is well known that the aspirates are not objects of much care before a language has become settled by writing, or with persons who do not write; as the lower classes in England so often omit the a where it should be pronounced, and pronounce it where it
does not belong. Thus, for instance, we find the root of the 
German flamme, English flame, in the Danish and Anglo-Saxon lioma, connected with the Latin lumen, the root of flamma (flame). The English 
fire, the Low-German ralch (pronounced rieh) and the German 
rauch (quick). The Boians, finding the v aspirated, changed it to a sound without aspiration, and used, in order to indicate it, two F (gamma), one above the other, which was the origin of the character F.
The Romans for some time used F inverted, thus, 6, for V consonant, as TERMINAQT for TERMINAVIT, or DG1 for DIVI. Some have supposed that this was one of the three letters invented by Claudius, but many inscriptions, belonging to periods much anterior to the time of Claudius, exhibit this singular use of this letter.
The Germans pronounce v like f.
The Romans often put f for ph, as, on some medals, triumfus for triumphus, furia, focas, &c.
This is always done by the Italians and Spaniards, as, filosofa. Klostock, and some other Germans, and especially Low-German, introduce this orthographic change, and published a few works with this and other changes in the orthography, but they soon abandoned it. In languages in which the vowels do not prevail so much as in Italian or Spanish, it is of greater importance to retain the etymological orthography. The f with the Romans, and g with the 
Greeks, was branded upon the forehead of runaway slaves. It signified fuga and gula. F signified, as a number, among the Romans, 40; with a dash over it, 40,000. F, on engravings or pictures, stands for feet or fabicat (made). In jurisprudence, $f$ signifies the pandects. This abbreviation originated in the early periods of the art of printing, when no 
Greek characters had yet been cast, and $f$ was used for $r$, the first letter of ravius. On medals, monu-
ments, &c., F stands for Fabius, Furius, &c., Filius, Felix, Fuscatus, &c. $ff$, on Roman coins, 
means flando, feriando. On French coins, $F$ means the mint of Angers; on Frisian coins, of Magde-
burg; on Austrian, of Halle in the Tyrol. F, with merchants, signifies folio (page). $F$ often stands on 
documents for flat (let it be done, granted, &c.) $Fr$ is the abbreviation for florin, or guider; $fr$ for franc; $ff$, in German, for folgende, like seq. in Eng-
lish.

F; the nominal of the fourth note in the natural diatonic scale of C. $F$, in music, over a line, means forte; $ff$, molto forte.

FA. The name given by Guido to the fourth note of the natural diatonic scale of C.

FABRONI, Giovanni, an eminent Italian philoso-
pher, who distinguished himself by his attention to 
political economy, agriculture, and physical 
science. He was secretary to the Accademia dei 
Georgofili, director of the museum and cabinet of 
natural history at Florence, one of the forty members of the Société Italiane delle Scienze, Turin, deputed 
for the new system of weights and measures, member of the 
deputation of finance under the government of 
the queen regent of Etruria, one of the deputies to 
the corps législatifl in France, director of bridges and 
highways (under the imperial government) for the 
department beyond the Alps, director of the mint at 
Florence, royal commissioner of the iron works and 
mines, and one of the commissioners of taxes for 
the states of Tuscany. In all these posts he displayed 
activity, zeal, intelligence, and integrity. His writ-
ings, which attracted much notice at the time of the 
Roman for some time used $F$, thus, striking facts, the sound maxims, and the extensive 
views in which they abound, but also for the im-
pressive manner in which the opinions of the author 
are enforced. The best known of his works are his 
Provedimenti A'monari; his Discourses on Na-
tional Prosperity, on the Equilibrium of Commerce, 
and the Establishment of Custom-houses; on the Ef-
fects of the French Revolution in France; on Re-
ward for the Encouragement of Trade; on the 
Chemical Action of Metals; on the Value and Re-

ciprocal Proportion of Coins; on the Scales and 

Steel-yards of the Chinese; on the Palaces of Spain; 
and on the Ancient Hebrew People. He left behind 
him many learned men, to save him. Of very 
valuable manuscripts. He died at Florence in 1825, 
aged upwards of seventy.

FABBI, an ancient and renowned family of 
Rome. One of the stories in ancient Roman his-
tory, is, that all of them who were able to bear arms, 
306 in number, once fought together against the 
Veientes, on the little river of Cremers (477 B.C.), 
and were killed, to a man.

FABIUS MAXIMUS, Quintus, surnamed Con-
tator (the delayer), one of the greatest generals of 
another, the Roman legionions as dictator, and, 
inducing his own army dispirited, while that of Han-
 nibal was numerous and formidable, he formed 
the plan of weakening and fatiguing the enemy by 
marshes and delays, instead of risking the fortunes 
of the state upon the event of a single battle. Han-
 nibal, who well knew the character of his formidable 
enemy, sent him this message, in order to 
draw him into battle: "If Fabius is as great a 
general as he would make us believe, let him descend 
to the plain, and accept the challenge which I offer 
him." But Fabius coolly replied: "If Hannibal is 
as great a general as he thinks himself, let him com-
pel me to accept his offer." Dissatisfied with his 
cautious movements, which they ascribed to a false 
 motive, the Romans summoned him back to the 
city under pretence of wishing his presence at a 
solemn sacrifice, and, in the interim, gave a joint 
command, with equal power, to Minucius Felix, 
who was as rash as Fabius was prudent. He had al-
ready fallen into an ambuscade, and was on the point 
of being routed by the Carthaginian general, when 
Fabius arrived, in season to save him. Fabius, who 
penetrated with gratitude, gave up his share of the 
command, and resolved to learn of Fabius how to 
fight and conquer. At the end of the campaign, 
Fabius laid down his office. The new consul, 
Terentius, a presumptuous and ignorant man, risked 
a battle at Cannae, in which the Roman army was 
almost totally destroyed. Fabius, after the battle, 
negotiated with Hannibal for the ransom of the 
prisoners, and, when the senate refused to fulfill 
the agreement, he sold his own estates, in order to 
keep good his word. He died at a very advanced age, 
392 B.C.

FABLE, which, in its most extensive sense, is 
synonymous with fictitious narration, has, in poetry, 
a double signification, since it expresses, in dramatic 
and epic poetry, the tissue, the arrangement of 
the events related, and is also the name of a particular 
class of poetical writings. When we speak of the 
fable of an epic or dramatic poem, it is used in op-
position to history. The poet's description aims at 
beauty, his piece must please as a whole, and the oc-

currences must be so arranged and exhibited as to 
accomplish this end. He paints not the real, but 
the possible; things as they are, but as they 
might well be; not with historic truth, but according 
to the laws of poetical probability. The fable, as a 
particular kind of poetry, sometimes called apologue,
is justly considered a species of didactic composition, and is a kind of allegory. It may be described as a method of inculcating practicable rules of worldly prudence or wisdom, by imaginary representations drawn from the physical or external world. It comprises symbolical representation, and the application, or the instruction intended to be deduced from it, which latter is called the moral of the tale, and must be apparent in the fable itself, in order to render it poetical. On account of its aim, it lies upon the borders of poetry and prose; as rarely in true poetic spirit, and pleases independently of its object. The satisfaction which we derive from fables does not lie wholly in the pleasure that we receive from the symbolical representation, but lies deeper, in the feeling that the order of nature is the same in the spiritual and the material worlds. In the material world, the eternal forms of laws and qualities are more uniform and perceptible, than in the moral world, and, for this reason, the fabulist (whose object is not merely to render a truth perceptible by means of a fictitious action, for a parable would do this) chooses his characters from the brute creation.

I. Theoric, intended to form the understanding; thus a phenomenon of nature, as illustrative of the laws of the universe, is used to exercise the understanding. For example, when the dog, with a mouthful, sniffs at a shadow in the water; when the sheep contends with the wolf; or the hare hunts with the lion. 2. Moral, which contain rules for the regulation of the will. We do not learn morality from the brutes, but view the great family of nature, and observe that she has connected the happiness of all living creatures with the changeable, eternal law of effort, and take example from the observance of this law by the lower orders of creation; as, for example, "Go to the ant, thou sluggard!" 3. Fables of fate or destiny. It cannot always be made evident how one thing follows as a necessary consequence from another; here, then, comes in play that connexion of events which we call fate, or chance, and which shows that things follow, at least after, if not from one another, by an agency from above. The fox, with pride, plunges into the altar, which sets fire to her nest, and thus her unfledged brood becomes the prey of animals which she has already robbed of their young. The plan of the fables is regulated by this threefold division of the subject and character. In general, it must possess unity, that the whole tenor of it may be easily seen; and dignity, since the subject has a certain degree of importance. But this does not exclude gayety or satire.

Some fables are founded upon irony; some are pathetic; and some even aspire to the sublime. The writers of ancient fables were simple, calm, and earnest. The oldest fables are supposed to be the Oriental; among these, the Indian fables of Pilpay (Bilpai or Bilpai), and the fables of the Arabian Lockman, are celebrated. (See those articles.) Aesop is well known among the Greeks, and was imitated by Phaedrus among the Latin writers. Bodmer has published German fables of the time of Minne-sager. Boiser, who lived at the close of the 14th century, shows, in his Edelstein, that he possessed the true spirit of fable. The author of Reynard the Fox wrote a collection of serious fables. Burkard Wallis may be mentioned, in the 16th century. In the 17th, Gay among the English, and La Fontaine among the French, produced a powerful and popular work. The writings of the last named made fable the vehicle of wit, and spoke the language of society. Fables may have the form of narrative or dialogue.

FABRE D'EGLANTINE, PHILIPPE FRANCOIS NAZAIRE, a French dramatic writer, was born at Carcassonne, in 1575. In his youth he was much addicted to excess, and became, successively, a soldier and an actor. He played in Geneva, Lyons, and Brussels. Without much success. His poetry and poetic talent rendered him more successful in society. As early as his 16th year, he wrote a poem (L'Etude de la Nature) for the prize offered by the French academy, 1711. Having afterwards gained the prize of the Eglantine at the Floral games in Toulouse, he successively acted for that flower as a surname. He now wrote several theatrical poems, of which, however, only two, L'Intrigue épistolaire and the Pluton de Maiolere were successful. The latter is still considered one of the best characteristic pieces of the modern French stage. Of an ambitious spirit, he engaged with ardour in the revolution, acting with Danton, LaCroix, and Camille Desmoulins, wrote several revolutionary pamphlets, and was active on the 10th of August. Having been chosen deputy from Paris to the national convention, he at first supported moderate principles, but afterwards voted for the death of Louis XVI., without appreciating the danger of the revolution. He was chosen member of the committee of public safety. He attacked Brissot and the Girondists, and made a report on the introduction of the republican calendar, on which occasion he betrayed a great ignorance of astronomy. He afterwards became suspected by the Jacobins, was accused of being a royalist, and condemned to death, April 5, 1794.

FABRETTI, RAFAEL, one of the most learned antiquarians of modern times, was born in 1618, at Urbino, in the papal dominions, and devoted himself to the study of law in the school at Caglieri, where he received a doctor's degree in the 18th year of his age. He then went to Rome, where his elder brother, Stephen, a respectable lawyer, was residing. On this classic ground, covered with the remains of antiquity, in which he gained so much fame by his profound researches, his penetration, and ingenuity. He found powerful patrons in his professional career. He was sent to Spain by the cardinal Lorenzo Imperiali, with an important public commission to effect the successful termination of which he was made papal treasurer by Alexander VII., and, soon after, auditor of the papal legation at the court of Madrid. The leisure which these posts secured to him for thirteen years was employed in archaeological studies. He was afterwards enabled to examine the antiquities of Rome on the spot, by the return of the nuncio, Carlo Bonelli, who, being appointed cardinal, took Fabretti back with him to Rome. On the journey through France and Upper Italy, he examined all the monuments of antiquity that fell in his way, and formed an acquaintance with the most celebrated antiquaries—Menega, Malabou, Hardouin, and Montfaucon. On his arrival in Rome, he was promoted to the office of counsellor of appeals, in the Capitoline court of justice—an office which afforded him sufficient leisure to prosecute his favourite studies with indefatigable industry. The confidence of cardinal Cesi, however, soon called him to a different occupation. He was obliged to accompany the cardinal, who was appointed legate of Urbino, in the capacity of legal counsellor, and, in this situation, had an opportunity of serving his native city in various ways. He returned, after three years, to Rome, where he resided till his death, and found a powerful patron in the vicar of Imola cardinal Gasparo Carpegna. From that time, he devoted himself wholly to antiquarian researches. His first works on this sub-
ject (his three dissertations on the Roman aqueducts and his *Syntagma de Columna Trajana*) received the approbation of all the archaeologists except Gronovius, with whom he had a dispute of some bitterness about the meaning of certain passages in Livy. With equal erudition, Fabrettì afterwards examined the bass-reliefs now in the Capitoline Museum, illustrative of the sieges of Troy. Known by the name of *Iliac table*, as also the subterranean canals, made by Claudius, for draining off the waters of lake Fucinus. In these, as in the numerous inscriptions discovered and collected by him, he showed the depth of his archaeological knowledge. Carpegnà gave him the superintendence of *subterraneum Rome*, as it is called, or the catacombs. The treasures which Fabrettì here discovered, and with which he adorned his house at Urbino and his country seat, form the subject of his last work. He met with equal favour from Alexander VIII., who made him *secretario de' memoriali*, and finally canon in the church of St Peter. Alexander's successor, Innocent XII., appointed him superintendence of the secret archives in the castle of St Angelo, which office he held till his death, in 1700.

Several treaties of Fabrettì did not appear till long after his death. An account of his life, by cardinal Rivieri, may be found in Crescimbeni's *Lives of illustrious Emperors and Emperresses*, and again, by the late Macottì, in Fabroni's *Lives of Illustrious Italians*. Fabrettì's rich collection of inscriptions and monuments was purchased by cardinal Stopparì, and may be now seen in the ducale palace at Urbino. It is related, that Fabrettì's horse, on which he made his excursions in the neighbourhood of Rome, became so accustomed to stop at every monument, that he often did it spontaneously, when his master, absorbed in thought, had overlooked some half-defaced inscription by the wayside, and thus discovered many monuments. Fabrettì was received among the Arcadians under the name of *Jasithens* (the Greek for *Iphage*), under which name he carried on a controversy with Gronovius.

**FABRICIUS, CAES (surnamed Lucius), a pattern of ancient Roman virtue, in his fearlessness, integrity, moderation, and contempt of riches. After having conquered the Samities and Lucanians, and enriched his country with the spoils, of which he alone possessed none, he was sent on an embassy to Pyrrhus, king of Epirus, to obtain the ransom of some Roman prisoners. Pyrrhus wished to bribe Fabrettì, with whose poverty he was acquainted, by large presents. But the honest Roman refused them. As little was he moved by the sight of an elephant, which Pyrrhus, to try his firmness, had concealed behind a curtain, and suddenly exhibited to him in a threatening posture. Pyrrhus dismissed him with admiration, and permitted the prisoners to go to Rome to celebrate the approaching Saturnalia, on a promise that they would return after the festival, which they faithfully kept. The king was so charmed with the conduct of Fabrettì, that he offered him the highest post in his kingdom if he would attach himself to him after the conclusion of peace; but he independently refused the offer. When consul (270 B. C.) Fabrettì sent word to Pyrrhus, that his physician offered to poison him for a certain sum of money, he sent a note payable to the sun from its course, than Fabrettì from the path of honour." In gratitude for the service, he released the Roman prisoners without ransom. In the year 270 B. C., the battle at Asculum was fought, in which Pyrrhus was victorious, but lost the best part of his army. Despite the death of his censor, with Zelensis Papus, and removed Cornelius Rufus from the senate, because he had ten pounds of silver plate. A man like Fabricius could not die rich. He was so poor at his death that his daughter received a marriage portion from the public treasury. To honour him even in death, the law of the twelve tables, which prohibited all burials in the city, was suspended in his case.

**FABRICIUS, JOHN ALBERT, a celebrated German scholar, was vize-chancellor in almost every department of human knowledge, possessed an immense store of learning, particularly in philology, and understood the art of using these stores of erudition to the greatest advantage. He was born at Leipsic, in 1668, where he studied philosophy, medicine, and theology, and was afterwards made professor of rhetoric and moral philosophy in the grammarium at Hamburg. In 1719, the landgrave of Hesse-Darmstadt offered him the first professorship of theology at Giessen, and the superintendence of the Lutheran parishes in his domains; but the authorities of Hamburg retained him in that city by enlarging his income, and he continued to reside there till his death, in 1736. His work on Greek literature is a model of profound, various, and comprehensive erudition. This is his *Bibliotheca Graeca*, improved by Harles. No less useful are his *Bibliotheca Latina*, *Bibliotheca media et infernum Atlatis*, *Bibliotheca Ecclesiastica*, and *Bibliotheca Antiquaria*. Besides these, his edition of Sextus Empiricus, and his remarks on Dion Cassius, evince the depth and extent of his learning.

**FABRICIUS, JOHN CHRISTIAN, one of the most celebrated entomologists of the 18th century, was born at Tundern, in the duchy of Sleswie, 1742. After he had finished his academic course at Copenhagen, at twenty years of age, he pursued his studies at Leyden, Edinburgh, and Freiburg, in Saxony, and under Linnaeus at Upsal. Few scholars of that great man profited more by his instructions. His works upon entomology show, evidently, the principles, the method, and even the forms of expression, peculiar to Linnaeus, applied to the development of a new, happy, and fruitful train of ideas. Nor did he attempt to conceal how much he owed his master; he has left to posterity, perhaps, the most important part of the existing materials for a complete biography of the great student of nature. From his intercourse with him he derived his first notions of his system, of arranging insects according to the organs of the mouth; and Linnaeus was so much impressed by Fabricius's method of organizing the insects, that he was induced to make use of it in the new edition of his *Systema Naturae*, which he, however, declined doing. Fabricius obtained, soon after, the situation of professor of natural history in the university of Kiel, and from this time devoted himself entirely to his favourite study. In 1775 appeared his System of Entomology, which gave to this science an entirely new form. Two years afterwards, he developed, in a second work, the characters of the classes and orders, and demonstrated in the *prolegomena* the advantages of his method. In 1778, he published his *Philosophia Entomologica*, written upon the plan of the well known *Philosophia Bot.*, of Linnaeus. From the first time till his death, during a period of 30 years, he was constantly occupied in extending his system, and in publishing it, under various forms, in works of different titles. He travelled almost every year through some part of Europe, examined the museums, and compared the two systems. His earliest works were written before the advent of the indefatigable industry the new species of insects which he was so fortunate as to discover. But, as the number of species increased beneath his ever active pen, the distinctions of the divisions and classes became more obscure and arbitrary; and, in this respect, his latter works were inferior to the earliest. The foundation he had assumed was excellent; it could not, however, lead him, as he supposed, to a
FABRONI, Angelo; a celebrated Italian biographer of the 18th century, born at Marradi, in Tuscany, 1732. He was educated at Rome, in the college of Pandinelli, where he studied logic, physics, metaphysics, and geometry, and wrote the life of Clement XII. Being supported and encouraged in his studies, he conceived the idea of writing the lives of the Italian literati of the 17th and 18th centuries, and devoted himself with the most active zeal to the execution of this work, the first volume of which appeared in 1765. He had many obstacles to encounter, of which one was the hostility of the Jesuits. He therefore repaired to Florence, where he received the office of a prior from the grand duke Leopold, and divided his time between clerical and literary employments. In 1769, he made a journey to Rome, was well received by pope Clement XIV., and was appointed one of the prelates of the pontifical chamber. He returned, however, to Florence, and published Letters of the Learned Men of the 17th century, from the archives of the Medici. In 1773, he was chosen tutor of the grand duke's children. He now found time to renew his biographical labours. He was called to Naples, and visited Vienna, Dresden, and Berlin. In his latter years, he employed himself in theological writings, and died 1803. The best edition of his Lives (Vita Italorum Doctrinae excellentiae qui Seculo XVII, et XVIII, floreuerunt) is the Pisa edition of 1778-99, 18 vols. The 19th and 20th volumes were added after his death, one of them containing his own life up to 1800. This work, containing 167 biographies, is one of the best in its kind.

FABRONI, Giovanni. See Fabbroni.

FACADE is the outside or external aspect of an edifice. As in most edifices only one side is conspicuous, viz., that which faces the street, and usually contains the principal entrance, this has been denominated, par eminence, the façade. As a work of architecture, it must form a whole, of which all the parts are properly related and symmetrically arranged, and correspondent to the character or style of the edifice. See Architecture.

FACCHETTO, James, an Italian philologist, was born at Torreglia, near Padua, in 1682. The talent discovered by him when a boy caused the cardinal Barbarigo to place him in the seminary at Padua. Here he became, in a few years, doctor in theology, professor of this science as well as of philosophy, and, finally, prefect of the seminary and director-general of studies. He devoted the greatest attention to reviving the study of ancient literature; and, for the promotion of this object, he undertook a new edition of a dictionary in seven languages, which was called the Calcipin, from the name of its author, the monk Ambrosius Calcipinus. His pupil, Forcellini, assisted him in the undertaking, and the work was completed in two vols, fol., between the years 1715 and 1719. He now, in company with his industrious disciple, conceived the idea of a Latin lexicon, in which every word, with all its significations, should be contained, and illustrated by examples from the classical writers, after the manner of the Dictionary of the Crusca. This undertaking occupied them both for nearly forty years. Faccidotto directed the work, which was almost entirely executed by Forcellini. With the same assistant, and some others, he superintended a new edition of the lexicon of Schrevelin, and the Lexicon Ciceronianum, of Nicoli. He also, in 1760, published a work, which are characterized by their Ciceronian elegance of style, but differ from their model by a precise brevity.

He also compiled the History of the University of Padua, which had been brought down to 1740 by Pappadopoli. He died 1760.

The lexicon of Facchiano and Forcellini continues to be the standard lexicon of the Latin language, all the other Latin dictionaries of value having been formed chiefly from it. The latest complete edition is that of James Bailey (London, 1829), published by Baldwin and Cradock, and Pickering, in 2 vols. 4to, containing upwards of 3000 pages, with many highly useful appendices.

FACE, the front part of the head, the seat of most of the senses, is composed of the forehead, the eyes, the nose, the cheeks, the mouth, the lips, the jaws, the teeth. Beneath the skin, which, in the face, is more delicate, more soft, more sensitive and clear than in other parts, are numerous muscles, by which the motions of the skin are produced. They are enveloped in fat. There are, also, a greater number of vessels and nerves in the face than in any other external part. Underneath these is the bony basis, which, exclusive of thirty-two teeth, is composed of fourteen bones, called, in anatomy, the bones of the face. The anterior part of the skull (os frontis) also forms an important feature of the face. Of all these bones, the lower jaw, only, is movable, forming an articulation with the skull. The other bones are firmly joined together, and incapable of motion. The character of each individual is strongly marked by the confirmation of the countenance. Physiognomy, therefore, in a certain degree, always has existed. The poetry of early ages contains descriptions of the features of heroes, corresponding to the character of the individual; and, in ordinary life, every person who engages a servant is influenced by the expression of the countenance. The great question is, how far we can reduce our experience to certain rules. Upon this point, physiognomists and phrenologists have both, we consider, carried their speculations to an absurd length. The latter class, especially, presuming on the generally recognized fact, that a well developed forehead indicates superior intellect, have endeavoured to divide and parcel out the cranium into little cells or boxes, each appropriated to its own faculty or feeling, so that they may be enabled to ascertain, from the size and form of the cells, the specific character of that intellect. See Phrenology.

It may be here remarked that the face acquires its expression from bodily habits and actions, and particularly from diseases. The form of the bones produces a great difference in the external appearance of the face, in brutes and in men. The jaws of the former are more projecting, so as to form an acute angle with the forehead; those of the latter recede in proportion to the prevalence of the human formation and beauty. On this relation of the jaw to the forehead is founded the facial line, discovered by Peter Camper. Suppose a straight line drawn at the back of the eye, from the highest occipital cavity across the external orifice of the car to the bottom of the nose. If we draw another straight line from the bottom of the nose, or from the roots of the upper incisors, to the forehead, then both lines will form an angle which will be more acute the less the shape of the face, in brutes, resembles that of men. This angle is in a gorilla about 65° to 60°; in the orang outang, 63°; in the skull of a negro, about 70°; in a European, from 75° to 85°. It is very remarkable, that in the Grecian works of statuary, this angle amounts to 90°; in the statues of Jupiter, it is 100°. The features of the face are such as to represent the facial angle of the six varieties of the human race, all markedly distinct in their character:
of the MS. by the nature of the characters. See Manuscript.

FACTOR, in arithmetic, is any number which is multiplied by another: thus 7 and 4 are the factors of 28. They are divided into simple and composite. A simple factor is one which is indivisible by itself.—In commerce, a factor is an agent employed by merchants residing in other places, to buy and sell, and to negotiate bills of exchange, or to transact other business on their account. Establishments for trade, in foreign parts of the world, are called factories.

FAENZA (anciently Faentia and Faletto); a town in the States of the Church, in Romagna; twenty miles south-west of Ravenna; lon. 11° 51' E.; lat. 44° 18' N.; population, 14,000. It is a bishop's see. It contains a cathedral, twenty-eight parish churches, and twenty convents. It is noted for its potteries (see Faience), and has some manufactories of linen. The cathedral stands in the great square, and is adorned with a handsome steeple, five stories high, with balustrades. Near the church there stands a fountain, the basin of which is supported by four fine lions of brass, and surrounded with a wrought iron rail. Torricelli was a native of this place.

FAGEL; a Dutch family which has given to the United Provinces a series of able statesmen and warriors. From 1670 to 1705, the important station of secretary to the states-general was filled by a member of this family, which has constantly been attached to the Orange party, but always from disinterested and irreproachable motives.

1. Gaspar Fagel was born at Haerlem, 1629, and died 1688. He filled the highest offices, and particularly distinguished by his spirit and firmness, during the invasion by Louis XIV. With Sir William Temple, he laid the foundation of the peace of Nime- gen, 1678. In the negotiations with France, he resisted all the intrigues and arts of the French ambassador, d'Avaux, and nobly refused a sum of 2,000,000 livres, which d'Avaux offered him to gain him to his interests. Fagel's great triumph was the elevation of William III, to the English throne. He prepared the proclamation which William issued on this occasion, and arranged all measures for that enterprise. He died, however, before the intelligence of complete success had arrived. He was never married, and left no property. Concerning his character, the reader should consult the works of Wicquefort, and of Mr. Hogarth.

2. Francis, nephew of Gaspar, and son of Henry Fagel, was, like them, secretary to the states-general; born 1659, died 1746. This great statesman's biography, by Onno Zwier van Haren, was unfortunately burned in the manuscript.

3. Francis, born 1740, died 1773, was also secretary of the states. Francis Hemsterhuis composed a fine eulogy upon him.

4. Henry, born 1706, and died 1790. He had a principal part in elevating William IV. to the dignity of stadtholder in 1748.

5. Francis Nicholas, also a nephew of Gaspar, entered the military service in 1672, and died 1718, general of infantry in the service of the states-general, and imperial lieutenant-field-marshal. He distinguished himself in the battle at Fleurus, 1690. The famous defence of Mons, 1691, was directed by him. He also displayed great military talent at the siege of Namur, at the capture of Bonn, and in Portugal, 1703, in Flanders, 1711 and 1712, and at the great battles of Ramillies and Malplaquet.

6. Henry, a son of Henry (4), has been ambassador of the king of the Netherlands in London. He has distinguished himself by his attachment to the
FAHLENZ—FAIRMAN.

house of Orange, even in the times of their greatest adversity, has filled the most important stations, and conducted most difficult negotiations. In 1814, he secured the treaty of peace between Great Britain and the Netherlands.

FAHLENZ. See Copper.

FAHRENHEIT, GABRIEL DANIEL, known for his arrangement of the thermometer and barometer, was born at Danzig, about the end of the seventeenth century, and was originally designed for the commercial profession. His inclination for natural philosophy induced him to quit that business, and having travelled through Germany and England to enlarge his knowledge, he settled in Holland, where the most celebrated men in this branch of science, s'Gravesande and others, were his teachers and friends. In 1720, he first conceived the idea of using quicksilver instead of spirits of wine in thermometers—a discovery by which the accuracy of the instrument was very much improved. He took, as the limit of the greatest cold, that which he had observed at Danzig in the winter of 1709, and which he could always produce by quicksilver quantities of snow and the ammoniac. The space between the point to which the quicksilver fell at this temperature, and that to which it rose in boiling water, he divided into 212 parts; and this distinguishes his thermometrical scale from Réaumur's. (See Thermometer.) He gives an account of it in the Philosophical Transactions for 1724. Nine degrees of Fahrenheit are equal to four of Réaumur, and five of the centigrade scale. Fahrenheit also employed himself, during his residence in Holland (where he died, 1740), in the construction of a machine for draining the parts of the country exposed to inundations, for which he received a patent, but which was prevented from being completed by death. The change which s'Gravesande, whom he had requested to finish the machine for the benefit of his heirs, made in it, rendered it so useless in the first trial, that no attempt was afterwards made to complete it. A detailed account of Fahrenheit's theory of the thermometer may be found in Biot's Physique Expérimentale, vol. 1st.

FAIENCE, Imitation Porcelain; a kind of fine pottery, superior to the common pottery in its glazing, beauty of form, and richness of painting. It derived its name from the town of Faenza, in Romagna, where it is said to have been invented in 1299. A fine sort of pottery was manufactured there by the Italians called Majolic, probably from its inventor. Some pieces were painted by the great artists of the period, Raphael, Giulio Romano, Titian, and others, which are highly valued, as monuments of early art. The Majolica reached its highest perfection between 1530 and 1560. The king of Wurttemberg possesses a rich collection of it. The modern Faience appears to have been invented, about the middle of the sixteenth century, at Faenza, and obtained its name in France, where a man from Faenza, having discovered a similar kind of clay at Nevers, had introduced the manufacture of it. Towards the end of the seventeenth century, the city of Delft, in Holland, became famous for the manufacture of Faience, which was called also Delftware. It does not, however, resist fire well. The English stone ware, made of powdered flint, has some resemblance to the Faience, but is, in reality, entirely different. See Glassware.

FAILURE. See Bankruptcy.

FAIR; a greater kind of market granted to a town, by privilege, for the more speedy and commodious buying and selling, or providing such things as the place stands in need of. The most important fairs now held are probably those of Germany, and particularly the Leipsic fairs. In German, a fair is called Messe, which also signifies a mass. High masses, on particular festivals, collected the greatest numbers of pilgrims. This custom, especially in the east, became the origin of markets, and, at a later period, of fairs, which, as we have already said, are only privileged markets. The three chief fairs of Germany are those of Leipsic, Frankfort on the Maine, and Brunswick, the Leipsic book-fair is unique. (See Leipsic.) The Leipsic fair, beginning January 1, is called New-year's fair: the Easter fair, or Jubilate fair, begins on Jubilate Sunday, and Saint Michael's fair, on the Sunday after September 29. Each lasts three weeks, but only the two last are important. The Easter fair is the most important. Frankfort on the Maine has the Easter fair and Autumn fair, and Brunswick, the Candlemas fair and St. Lawrence's fair. Important fairs are also held at Alessandria and Sinsigiglia in Italy, at Lyons and Beaunaire in France, Bolzano in the Tyrol, Zurich in Switzerland, Niemel-Nowgorod in Russia, Warsaw in Poland, &c. But fairs cannot now have the importance of their origin, and communication between different parts of a country has become so easy that merchandise is much oftener ordered directly than formerly.

Among the principal British fairs may be mentioned:—Stourbridge fair, near Cambridge—Bristol, two fairs, one in March and one in September—Exeter fair, in December—Walthill fair (Oct. 10) in Hampshire, for sheep—St. Faith's, near Norwich (Oct. 17), for Scotch cattle—Ipswich fairs, in August, for lambs, and in September, for butter and cheese—Horncastle, in Lincolnshire, in August, for horses, the largest horse fair in the kingdom—Howden, in Yorkshire, also for horses—Hatherleigh, Carlisle, and Ormskirk fairs, for Scotch cattle—Falkirk fairs or trysts, in August, Sept., and Oct., for Scotch cattle—Woodbridge lady-day fair, for Suffolk horses—Glasgow July fair, for horses and cows—Gloucester April fair, and Woodstock October fair, for cheese—Woodborough hill in Dorset, for kerseys, druggets, &c.

FAIRFAX, EDWARD; a poet of the seventeenth century, who is regarded as one of the great improvers of English versification. He engaged in no profession, but, settling at Newhall, in the parish of Fuyistone, in Knaresborough forest, led the life of a retired country gentleman, devoted to literary pursuits. He died about 1632. Fairfax's reputation rests on the fairs, which are called The fair, first published in 1600. It is written in the same stanza with the original, and combines fidelity to the sense of the author, with harmony of versification. After being for a while superseded in the estimation of the public, by the inferior translation of Hoole, it has been more justly appreciated, and recent editions of it have issued from the press. Fairfax wrote eclogues and other poems not known to be extant, except one of the former inserted in Mrs Cooper's Muse's Library. He also wrote in prose on demonology, in which he was, it seems, a believer.

FAIRFAX, THOMAS, LORD; a distinguished commander and leading character in the civil wars which distracted England in the seventeenth century. He was born in 1611, at Denton, in Yorkshire, being son and heir of Ferdinand, lord Fairfax, to whose title and estates he succeeded in 1647. A strong predestination for a military life induced him to quit Cambridge, and, at an early age, to volunteer with the lord Vere, and by whom he gained a campaign in the Netherlands with some reputation, and whose daughter he afterwards married. When the disputes between Charles I. and the parliament terminated in open rupture, Fairfax warmly espoused the cause of the latter, and joined his father in making active
preparations for the approaching contest. In the earlier part of his career, he suffered various checks from the royalist forces, especially one in 1645, at Addington, but by the battle of Marston Moor he redeemed his credit, and the earl of Essex resigning the command of the parliamentary army, Fairfax was made general-in-chief in his room. After the victory at Naseby, to the gaining of which his courage and conduct mainly contributed, he marched into the western counties, quitting all opposition to the roundhead troops. When the king fell into the power of the prevailing party, considerable jealousy appears to have been entertained by Oliver Cromwell and his adherents of Fairfax, who seems to have been far from wishing to push matters to the extremity to which they afterwards went; and it is said that, in order to prevent his interference with the execution of Charles, Harrison, at Cromwell's instigation, detained him, under pretense of worship, at a distance from Whitehall, until the blow was struck. Nevertheless he still adhered to the party with which he had hitherto acted, and continued in employment, though he was not at liberty to speak his mind, till, being ordered to march against the revolted Scottish Presbyterians, he positively declined the command, and retired for a while from public life. At the restoration he crossed over to Holland for the purpose of congratulating Charles II. on his accession, and in the same year published his Remarks on the Laws and Customs of Moor. He now retired with a leisure dedicated to the cultivation of letters, especially of antiquities. He left behind him a few miscellaneous pieces, among which is a sketch of his own public life, printed in one 12mo vol. 1659. He died in 1671.

FAIRIES. FAIRY TALES. Every child knows that fairies are a kind of good and bad spirits. The former are usually the most beautiful women in the world, the latter the most hateful monsters. They are often found present by the cradle, or the decisive moments in life, to influence the fate of the individual. They have great power, united with great knowledge, and their wands work wonders. Still, both their knowledge and power are limited, as is also their free agency; they can only act under certain circumstances, which is not in their power to control; for more powerful than fairy or magic influence is the mysterious working of fate. Who has not felt at times almost miraculous concatenation of events in life, by the agency of these active sprites, and to imbody the invisible agents of nature in visible forms? In an age of ignorance, the imagination easily substitutes a poetical mythology in the place of natural causes. The native land of this fairy mythology is Arabia, from whence it was brought to Europe by the Troubadours. The European name fairy comes from fatum, fate. The Italians still call a fairy fata. Fairies are often mentioned in the traditions of the Italians, who, as well as the Arabs, had stories of a country of fairy land inhabited by fairies.

The poetical belief in the existence of fairies, was introduced into France in the twelfth century, by Lancelot of the Lake. The wonderful power of the Lady of the Lake increased a taste for fairies in France and foreign countries, which Philip, count of Flanders (1191), contributed not a little to extend. The higher classes believed their existence as described in romances; the people saw them everywhere, but particularly in ruined castles, or such as were surrounded with forests (the fairy Melusine ruled in the castle of Lusignan); but they also dwelt around fountains and trees. They played a part in the romance of the romancers of Germany and fabliau, and gave them a peculiar charm; they constituted their machinery, and the romantic epics of Boiardo, Ariosto, and others, are not a little indebted to them. They were naturalized in England before the time of Chaucer and Spenser; and tales of their doings were so widely spread that they appear fixed in the popular belief, that they did not appear extraordinary or unnatural when brought upon the stage by Shakespear. They were easily reconciled to the Christian doctrine of good and evil spirits, and Tasso, in his Jerusalem Delivered, attempted to reduce to a poetical system these spiritual beings, partly Christian and partly heathen.

In the last part of the seventeenth century, the true fairy tales first became popular, and here also the Italians appear to have taken the lead. The Pentameron, by Basilo, enlarged by Alessio Abbattia, led the way. In 1667, circumstances connected with the private history of Louis XIV. brought these tales into vogue in France, after the revocation of the edict of Nantes, 1685, and after Perrault had published the Contes de ma Mère l'Oye, in 1697, he was immediately imitated by a multitude of authors. The learned Orientalist Antoine Galland appears to have been led to translate the Arabian Tales, The Thousand and One Nights (see Arabian Nights), which appeared in 1704, by the prevailing love for fairy tales. The popularity of the fairy tales appears from the multitude of similar stories which have since appeared. The best have been collected in the Cabinet des Fées (Paris, 1705), 37 vols., of which contains an account of the authors. The principal criticisms of Boileau's school, who ranked judgment higher than imagination, set themselves vehemently against them; but they continued to be fashionable till satiety produced disgust. It then began to be seen that Hamilton, who wrote such excellent fairy tales himself, might have been in the right in his ridicule of them.

FAIRWEATHER MOUNTAIN; on the West coast of North America, 100 miles S.E. Admiralty bay; lat. 137° W.; lat. 59° N. It is one of the principal summits of the Cordillera of New Norfolk, rising, according to accurate observations, to the height of 14,900 feet above the level of the sea, and is covered with perpetual snow.

FAIRY CIRCLE, or RING; a phenomenon frequent in the fields, &c., formerly supposed to be traced by the fairies in their dances. There are two kinds; one of these is a circle of stones, forming a round, bare path, a foot broad, with green grass in the middle of it. The other is of different bigness, encompassed with a circumference of grass, greener and fresher than that in the middle. Some attribute them to lightning, and others to a kind of fungus which breaks and pulverizes the soil.

FAKE; one of the circles or windings of a cable or hawser, as it lies disposed in a coil. The fakes are greater or smaller, in proportion to the extent or space which a cable is allowed to occupy where it lies.

FAKIR, or SENASSY; a kind of fanatics, in the East Indies, who retire from the world, and give themselves up to contemplation. They endeavour to gain the veneration of the people by absurd and cruel penances. Some roll themselves in the dirt. Others hold an arm raised in one position so long that it becomes withered, and remains fixed in this position for life. Others keep the hands clasped together so long that the nails grow into the flesh, and come out on the other side. Others turn their faces over the shoulder, or the eyes towards the end of the nose, till they become unconsciously fixed in this direction. They make a vow to live at the expense of the faithful. Some of them, however, possess money and land. There are Mohammedan and Hindoo fakirs: the number of the
former is considerable. This idea of the virtue of self-tormentor seems to have originated in the East, and was received by the early Christians, who made penance a means of conflict with the temptations of the world. See Analectores, and Dervise.

FALASHAS; a Jewish tribe, tributary to Abyssinia. They formerly lived in the mountains of Samen, where they seem to have formed a more or less independent state, under their own monarchs; but, since they have become tributary to Abyssinia, they have been dispersed over that country, but reside chiefly on the banks of the Bahr-el-Abiad, among the Shilooks. See Abyssinia.

FALCON. See Eagle, and Hawk.

FALCONER, William, an English poet and writer on naval affairs, was born at Edinburgh, about 1730. He went quite young to sea, in the merchant service, in which he rose to the situation of second mate, when the vessel to which he belonged was cast away, and he was thus furnished with the incidents of the Shipwreck, which was published in 1702. It was dedicated to Edward, Duke of York, by whose patronage the young sailor was appointed a midshipman, in 1703. In 1709, he published a Universal Marine Dictionary. The same year, he sailed for Bengal, in the Aurora frigate, which was never heard of after she quitted the cape of Good Hope. The subject of the Shipwreck is a voyage from Alexandria, in Egypt, to the cut shortest sea, which is represented as having happened near Cape Colonna, on the coast of Greece. The versification is varied and harmonious; the descriptions are drawn from nature; the incidents well told, and calculated to excite the sympathy of the reader. His other poems have little merit.

FALCONER, Jean Maurice; a celebrated French sculptor of the eighteenth century. He was born in humble life; and, displaying a natural taste for the fine arts, he was assisted in his studies by Lemoine. Catharina II. of Russia patronised him, and he was employed by her to execute the colossal statue of Peter the Great, erected at Petersburg, which occupied him twelve years. He wrote notes on the thirty-fourth and thirty-fifth books of Pliny's Natural History, Observations on the Statue of Marcus Aurelius, and other works relating to the arts, printed together in 6 vols. 8vo. (Paris, 1781.) Falconet died at Paris, in 1791.

FALCONE, d. c. J., a celebrated Italian falconer, is a very old amusement in Europe and Asia. In the middle ages, it was the favourite sport of princes and nobles; and, as ladies could engage in it, it became very prevalent, particularly in France. In an old poem on forest sports, by the chaplain Gasse de la Bigne (Roman des Dédalas), cited by Curne de Sainte-Falaye, in his work on chivalry, in a comparison of hunting with falconry, it is mentioned, as a particular advantage of falconry, that queens, duchesses, and countesses, are allowed, by their husbands, to carry the falcon on their wrists, without offending propriety, and that they can enjoy all the sport of this kind of hunting, whilst, in hunting with hounds, they are only allowed to follow by the wide roads, or over open fields, in order to see the dogs pass. The knight was anxious to pay his court to the ladies, on such occasions, by his attentions to the falcons. He was obliged to be careful to fly the bird at the proper moment, to follow her immediately, never to lose sight of her, to encourage her by calls, to take the prey from her, to carry her on the hood, and to place her gracefully on the wrist of his mistress.

In Germany, falconry was honoured as early as in the times of the emperor Frederic II. He was so fond of this sport that he would not even give it up during the labour of war, and wrote a work on falconry, to which notes were added by his son, Manfred of Hohenstaufen (Reliquia Librorum Frat. I. de Arte venandi cum avibus, ed. by J. G. Schott 4to. Leipzig, 1788, 2 vols. 4to.). In the feudal usages, we also find many proofs of the esteem in which this sport was held in Germany, England, and France. In Germany there were kais called Habitichten (hawk tenures), and, as early as the fourteenth century, some vassals were obliged to appear annually with a well trained falcon, or hawk, and a dog trained to assist in the same sport.

In France, falconry was most practised in the reign of Francis I., though this king, called the father of hunting, preferred the chase. The establishments for training falcons were under the direction of a grand falconer, who received an annual revenue of 100,000 livres, and had under him fifteen noblemen and fifty falconers. He had the care of more than 300 falcons, and enjoyed the privilege of hawking through the whole kingdom at pleasure. He received a fine for every falcon which was sold, and no falconer was allowed to sell a bird without his permission. The whole expense of it cost annually about 40,000 livres, followed the king, as did also his hunting establishment. One gentleman who was distinguished for his skill in hawking, was loaded with favours by the king, and enabled to keep sixty horses for his falconry alone. There was an old rivalry between the court falconers and the military; and the hunting of the stag began, and the falcons mewed, the hunters drove the falconers from the yard; whilst, in winter, when the stags are no longer worth hunting, the falconers retaliated on the hunters, and locked up the hounds. Falconry continued in favour until the seventeenth century; but the invention of firearms gradually superseded it.

In England, falconry was also in great favour, and there is to this day a hereditary grand falconer. The duke of St Albans, in his office of grand falconer, presents the king with a cast of falcons on the day of his coronation. A similar service is performed by the representative of the Stanley family in the isle of Man. Attempts have recently been made to revive this sport in that country; but it is hardly consistent with the usages of our time, particularly in England, on account of the general enclosure of the fields.

In the East, the Persians are particularly skilful in training falcons. They hawk after all kinds of birds, and even after gazelles. They are posted on the heads of these creatures, and to peck at their eyes, which checks them until the hounds came up. Wolves were formerly hunted in the same way in Europe. The falcons intended for this sport were taken young from the nest, and fed for months with the raw flesh of pigeons and wild birds, before they were inured to sitting on the hand, to which they were accustomed by resting on posts, &c. They were afterwards made tame by being deprived, for a long time, of sleep, and inured to endure a leathern hood. At first, they were tied with a string, about thirty fathoms in length, to prevent them from flying away, from which they were not released till they were completely disciplined, so as to return at the proper signal. When taken into the field, they were always capped, or hooded, so as to see no object but their game; and, as soon as the dogs stopped, or sprung it, the falcon was unhooded, and tossed into the air after his prey.

FALCONE, Cuno, and Marino, doge of Venice in the middle of the fourteenth century, had previously commanded the troops of the republic at the siege of Zara, in Dalmatia; he there gained a brilliant victory over the king of Hungary, and was afterwards ambassador to Genoa and Rome. His character is delineated with historical truth by Byron's tragedy of Marino Faliero,
the plot of which is taken from the following incidents in Fallier’s life. A patrician, Michael Steno, was in love with a young lady in the retinue of the wife of the doge. Disappointed in his hopes, he sought to get revenge by bringing charges of police-insulting to the latter, and for which the doge, a man of quick and violent passions, demanded a severe punishment. But, the patrician being sentenced only to a short imprisonment, Fallier resolved to take a fearful revenge on the whole body of the aristocracy, whom he deeply hated, and for that reason set his mind on murdering all the senators, on a day agreed upon, and annihilate the power of the senate. But the plot was betrayed just before it was to have been executed, and the doge and his fellow conspirators arrested and put to death, in 1355. A further account of this final establishment of the hereditary aristocracy, introduced by the doge, Gradenegro, 1297, is given by Duru, in his History of Venice. A play has been written on the same subject by Delavigne, 1820.

FALISCI; a people of Etruria, said to have been originally a Macedonian colony. An anecdote of Phaedra, at a king’s satyr day, and in after years, and forms the subject of various works of ancient art. When they were besieged by Camillus, a schoolmaster went out of the gates of the city with his pupils, and betrayed them into the hands of the Roman enemy, that, by such a possession, he might easily oblige the place, and with the proposal with indignation, and ordered the man to be stripped naked and whipped back to the town by those whom his perfidy wished to betray. This instance of generosity operated upon the people so powerfully that they surrendered to the Romans.

FALK, John Daniel, who, in early life, was one of the best German satirists, and in after years a mystic, was born at Dantzic, in 1770. The love of learning, which he early displayed, had to encounter great difficulties. His father, a poor wig-maker, hardly allowed him to be taught even to read and write before he employed him in his trade, and sought to destroy the boy’s love of knowledge in every way; but it only increased from opposition, and all his little savings were laid out at the circulating library, for the works of Gellert, Wieland, Lessing, &c., which he read by day and night, as he could find opportunity. Often, in winter, did he stand reading in the streets of Hamburg, with no one called to an account for his long absence, said he had been spending the evening with his grandfather. But his dissatisfaction with his situation increased with his years. An attempt to leave his father’s house and go to sea was unsuccessful; and, at last, at sixteen years, he succeeded in getting into a school, preparatory to entering the university. But he had still to contend with the greatest poverty. Wieland eventually brought him into notice as a writer. Falk has deserved the gratitude of his country, by the foundation of the society of Friends in Need, which educates, as a lasting establishment, great numbers of unfortunate children. The grand-duke of Weimar bestowed upon him an order and a title, and supported the establishment. There are at present many such establishments, which are productive of much good. His first satires were the Graber von Kom, and Die Gebete, both full of brilliant wit. They were followed, during six successive years, 1797 to 1803, by the Taschenbuch fur Freunde des Schertzes und der Satyre (The Pocketbook for the Lovers of Fun and Satire), in which there is much entertainment. He subsequently wrote principally upon religious subjects. He died on February 14, 1826.

FALKIRK, a town, and market, in Stirlingshire, situated near the Forth and Clyde canal, twenty-two miles distant from Glasgow and twenty-four from Edinburgh. It is a place of considerable antiquity, and near it was fought a celebrated battle between the Scotch and English, during the period when Edward I. of England attempted to usurp the sovereignty of Scotland. The graves of Sir John Graham and Sir John Stewart, two Scottish chiefs who fell in the conflict, are still pointed out in the churchyard of Falkirk. A second battle was fought here on the 17th Jan., 1746, between the royalists and the insurgents under Prince Charles Edward Stuart, in which the latter was the most victorious.

Falkirk consists of one broad street, in which the houses are in general lofty and well built, with a number of narrow streets branching off from it, or running parallel with it. Having a populous neighbourhood, the inland trade of Falkirk is considerable. The manufacture of leather and brewing of ale are carried on here to some extent. There are also extensive coal-works, distilleries, malt-works, and flour-mills in the immediate neighbourhood. But the town is chiefly noted for its three great cattle markets, or turnpike, held annually in August, September, and October, to which are brought the whole of the Scottish cattle of every description is brought, and purchased mostly by English graziers. The gist is held in an extensive field about two and a half miles north of the town.

The parish of Falkirk extends about seven miles in length by four in breadth, and includes the sandport of Grangemouth, the head of the English Channel, Camelon, Bainsford, and Grahamston. Population of town and parish in 1831, 12,743.

FALKLAND, a small town in Fifeshire, celebrated as having been once a residence of the Macduffs, earls of Fife, and afterwards of the kings of Scotland. James V. and VI. made it their favourite resort, and the former added greatly to the magnificence of the palace, of which there are still sufficient remains to give an idea of the taste and splendour of its architecture. The chief occupation of the inhabitants is weaving. Population of town and parish in 1831, 2659.

FALKLAND, viscount. See Carey.

FALKLAND’S ISLANDS, in the south Atlantic ocean, east of the straits of Magellan. They have been called Hawkins’s Maiden Land, South Belge, New Islands of St. Lewis, and Maltounnes; but the name of Falkland has generally prevailed. They consist of two islands in land, with a number of smaller ones surrounding them. They are mountainous and boggy. Besides the names above mentioned, they have also been called Peppy’s Islands, and Sebal de Werte’s Islands. Lon. 55° 30’ to 62° 16’ W.; lat. 51° 6’ to 58° 30’ S. A colony formerly existed upon these islands, at the head of Berkeley sound, but it was abandoned. A few years ago, the Buenos Ayrean government, however, appointed don Louis Vernet, a native of Hamburg, in Germany, governor of them. There are no natives. The climate is described as very healthy. Governor Vernet invites colonists to settle there. The harbour of Port Louis, formerly called Setford, affords a fine anchorage for vessels of any burden, in all winds, and is very easy of access. It is therefore convenient for white ships to water, &c.

FALLING STAR, in meteorology; a phenomenon that is frequently seen, and which has been usually supposed to presage a memorable event. Humphrey Davy, in a lecture delivered at the royal institution, gave many reasons against this opinion. He conceives that they are rather to be attributed to falling stones. It is observable, that when their appearance is frequent, they have all the same direction; and it has been remarked that they are the forerunners of a westerly wind in Great Britain.

FALL OF BODIES. All bodies on the earth,
by virtue of the attraction of gravitation, tend to the centre of the earth. If this tendency acts freely, the body falls towards the earth; if it is opposed by some obstacle, the body is only partly checked and partly efficient, pressure and descent both ensue. A ball, held in the hand, presses downward; if dropped, it descends perpendicularly; if placed on an inclined plane, it rolls down; in doing which it presses the plane with a part of its weight. The laws, according to which this motion takes place, were formerly the subject of the most erroneous theories. According to the physics of Aristotle, the velocity of the fall of bodies is in proportion to their weight. Consequently any body should fall with ten times more velocity than another, which is only one tenth part as heavy. This error Galileo attacked, while a student in Pisa. Soon after his appointment to a professorship, he declared himself against this and other maxims of the Peripatetic philosophy.

He ascended the cupola of the lofty tower at that place, and dropped bodies of very unequal weight, which, if their specific gravity did not differ much, were found to come to the ground at nearly the same time. Galileo eventually proved, when praised in Padua for the correctness of his position, by means of two pendulums, of equal length, and very unequal weight, which, nevertheless, performed their vibrations with equal velocity.

Equally erroneous hypotheses have been grounded on the fact, that the velocity of the descent increases in proportion to the space passed through. The Aristotelians said, that all bodies had a natural tendency to the centre of the earth, and hastened towards it with more velocity the nearer they approached it. Others explained the accelerated rapidity of the descent by the augmented pressure of the atmosphere. And the general opinion was that the velocity increased in the same proportion as the space passed through, and, consequently, that a body, after falling five fathoms, would have five times the velocity it had after falling through one fathom—an opinion, which, notwithstanding its great simplicity and plausibility, involves an absolute impossibility. Galileo, at length, arrived at the true opinion, that the velocity of falling bodies must increase in proportion to the time; and he proved that, as bodies can never be destitute of gravity, they must every instant receive a new impulse, which unites with the effect of the former. From this law, it moreover follows, that in the same time, fallen by bodies falling freely, are in proportion to the square of the times. Experiments have shown that, in the first second, the fall amounts to a little more than sixteen feet. In order to ascertain, therefore, the space $s$, through which a body would fall in any other number of seconds $t$, we have the equation $s : t^2 = 16 : t$. Supposing, for example, $t = 3$, we have $s = 144$; i.e., in three seconds, the body falls through 144 feet. For a convenient means of making experiments of this kind, Mr Atwood has invented an apparatus, which is known under the name of Atwood's machine.

Mr Benzenberg, a German, has also added much to the better understanding of this part of natural philosophy.

FALLOPIAN TUBES, in anatomy, are two ducts arising in the womb, one on each side of the fundus, and thence extended to the ovaries. These are called tubes, from their resemblance to a trumpet, and Fallopian tubes from Gabriel Fallopius (q. v.), a physician of Italy, in the sixteenth century, who is reported to have first ascertained their use and office.

FALLOPIUS, GABRIEL, a celebrated Italian anatomist, who was born at Modena, towards the close of the fifteenth century. He studied at Ferrara and at Padua, at which last place he is said to have attended the lectures of Vesalius. He became professor at Ferrara, whence, in 1548, he removed to Pisa. He continued there three years, and was then made professor of anatomy, and the materia medica, at Padua, where he remained till his death, in 1563. The principal work of Fallopius is his Observationes Anatomicae (Venet. 1561, 8vo), which, as well as his other writings, has been several times reprinted. He was the first anatomist who accurately described the vessels and bones of the fetus; and his account of the Fallopian tubes in females has perpetuated his name.

FALLOW LAND is ground that has been left unfertilized for a time, in order that it may recover itself from an exhausted state; but to render a barren soil fertile, it ought to be frequently turned up to the air, and to have mixed with it manures of annual dung, decayed vegetables, lime, marl, sweepings of streets, &c. In turning over the soil, the chief implements of the gardener are the spade, the hoe, and the mattock; and those of the farmer are the plough, the harrow, the roller, the scythe, and the sickle. As a success from the time a field has been cultivated, a rotation of different crops is necessary. Potatoes, grain, and white crops are exhausting; but after them, the soil is ameliorated by tares, turnips, and green or plant crops.

FALMOUTH; a seaport town of England, in the county of Cornwall, at the mouth of the river Fal, 202 miles W. S. W. of London. There is a great harbour here, and a fine and spacious roadstead. The town consists principally of one street, nearly a mile along the beach. There are two castles here, one of which (Pendennis) commands the entrance of the harbour. On the opposite side is St Mawes's castle. A considerable fishery of pilchards is carried on here. But the town is of no consequence, except as the regular station of the packet-boats, which carry foreign mails to all parts of the world. Population, in 1831, 7284.

FALSE in music; an epithet applied by theorists to certain chords, called false, because they do not contain all the intervals appertaining to those chords in their perfect state; as a fifth, consisting of only six semitonic degrees, is denominated a false fifth. Those intonations of the voice which do not truly express the intended intervals are also called false, as well as all ill-adjusted combinations; and those strings, pipes, and other sonorous bodies, which, from the want of harmony, are not properly tuned. Certain closes are likewise termed false, in contradistinction to the full or final close.

FALSE IMPRISONMENT, in law. To constitute the injury of false imprisonment, two points are necessary: the detention of the person, and the unlawfulness of such detention. Every confinement of the person is imprisonment, whether in a common prison or a private house, or even by forcibly detaining one in the streets or highways.

FALSETTO (Ital.); that species of voice in a man, the compass of which lies above his natural voice, and is produced by artificial constraint.

FALSTAFF, Sir John (see Frome). One of the most original dramatic characters which Shakespeare's master hand has painted, is his Sir John Falstaff, the boon companion of the dissipated Henry prince of Wales (afterwards Kng Henry V. of England, who died 1421). That same genius which could set before us the delirium of grief in Lear, the charming picture of Falstaff's loveliness, and the philosophic melancholy of Hamlet, has exhibited the fullest breadth of comic imagination in Falstaff, in Henry IV., and the Merry Wives of Windsor; in the latter by the particular order and for the entertainment of Queen Elizabeth. Falstaff is the hero of lazy seassna-
lists, but overflowing with wit and good humour. He is a soldier, but a cowardly boaster; grown old in sensual indulgences, which have made his body a shapeless mass of obesity. Under this sluggish exterior lurks a ready wit, dexterous in provoking and fulminating it that, after the discovery of the form which it has excited. The dramatic word cannot furnish his equal. He is universally entertaining. His impudence and selfish, sensual philosophy are allied with such exuberance of wit, that they make us laugh in spite of the contempt and disgust which they excite. Falstaff in all his broadest quips and most exasperating situations, which the world is continually presenting to us in more or less breadth of relief, but yet requires a good knowledge of English character to be fully realized.

FALSTER; an island belonging to Denmark, situated at the entrance of the Baltic, south of Zealand, from which it is separated only by a narrow sea; about sixty miles in circumference, elevated, but flat, well watered and wooded, productive in grain, pulse, potatoes, and, above all, fruit, so that it is styled the orchard of Denmark. The principal towns are Nyekiopig and Stubbekiopig. Lon. 12° 18' E.; lat. 56° 50' N. Population, 16,500; square miles, 178.

FALVA; a word which accompanies several Hungarian geographical names, meaning village.

FAMA; the goddess of report or rumour. She was the youngest daughter of the Earth, who revenged herself on the gods for the destruction of her sons, the giants, by bringing forth this mischievous goddess. Lopacious Fame divulges the deeds of the gods, and spreads reports among men. She is represented with wings; with as many ears, eyes, and tongues as feathers. She is said to fly through the world in the night, and in the daytime, to look down from high towers and roofs; small at first, and gradually increasing in her progress, &c. These are the fictions of Virgil and Ovid.

FAMAGUSTA; a mined seaport of Cyprus, on the east coast, built on a rock. It is about two miles in circumference, and is surrounded by strong walls, in good condition, and of great thickness; also by a deep ditch. The number of citizens is said not to exceed 200.

FAMILIAR SPIRITS; demons, or evil spirits supposed to be continually within call, and at the service of their masters, sometimes under an assumed shape, sometimes attached to a magical ring, or the like; sometimes doing voluntary service. We find traces of this belief in all ages and countries, under various forms. In Eastern stories, nothing is more common than the mention of magic gems, rings, &c., to which are attached genii, sometimes good, sometimes bad. The fawn of Sertorius is a well known instance in Roman history. But in modern Christian Europe, the notion of familiar has been restricted to evil spirits. Cornelius Agrippa is said, by Jovius, to have been always accompanied by a devil, in the shape of a black dog; which, on the death of his master, plunged into the Saone, and was never seen after. It is asserted that a person was compelled to carry about a familiar in the hilt of his sword.

FANAR. See the next article.

FANARIOTS or PHANARIOTS; the inhabitants of the Greek quarter, or Phanar (ες Φανάρι), in Constantinople; particularly the noble Greek families now that reside by the wish of the Byzantine emperors. The dragoman, or interpreter of the Porte, is taken from them. From 1731 to 1822, the Porte also chose from their number the hospodars of Moldavia and Walachia. Till 1693, the office of dragoman had been filled by Jews and renegades. In that year, Mahomet IV., for the first time, employed a Greek, Panayotaki, as grand interpreter. (See Ranke's Fürsten und Volker, &c., vol. i., under the division Disruption über die Griechen.) The power of the influential Fanariots, soon increased so much that, after the death of the form which it has excited. The dramatic word cannot furnish his equal. He is universally entertaining. His impudence and selfish, sensual philosophy are allied with such exuberance of wit, that they make us laugh in spite of the contempt and disgust which they excite. Falstaff in all his broadest quips and most exasperating situations, which the world is continually presenting to us in more or less breadth of relief, but yet requires a good knowledge of English character to be fully realized.

FANDANGO, x.; an old Spanish dance, which originated most probably in Andalusia, a province of the south of Spain, also of the kingdom of Walachia, Bassarabia Brancuroe, in 1731, a Greek, Myarcordatos, was appointed to succeed him. A Greek physician, Marco Zalloni, who was chief physician to the grand vizier, Yussuf Pacha, and was afterwards in Bucharest with the last Greek hospodar, disclosed, in his Essai sur les Fanariotes (Marcelles, 1894), the intrigues of those Fanariot noblemen, their exactions, which they shared with the Boyards, and the artifices and bribery by which they contrived to keep their station so long, imposing on the ignorant Turks for their own private interest. In the insurrection of the Greeks in 1821, the Fanariots used no influence, or, if they did, it was an influence injurious to their countrymen. Von Hammer, in his work on Constantinople and the Bosphorus, mentions the degeneracy of the Fanariots.

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The fandango is seldom danced but at the theatre, and in the parties of the lower classes. In these cases, as well as when this dance is performed in private balls of the higher classes, which seldom occurs, the dancers wear no particular dress, but sometimes a few persons assemble in a private house, and dance the fandango in all its genuine indelicacy. All scruples are shaken off. As soon as the dance commences, the meaning is so marked, that nobody can doubt of the tendency of the motions of the dancers. The fandango is danced by two persons only, who never touch so much as each other's hands; by their reciprocal allurements, retreats, approaches, and varied movements, by turns pursuing and pursued, their looks, attitudes, and whole expression are indicative of voluptuousness.

The etymology of the word fandango is not known, though many plausible derivations have been suggested.

The seguidillas is another kind of dance peculiar to the Spaniards. The seguidillas mancheegas is the name by which this dance is generally known. It is danced by two or four couples, and in some respects resembles the fandango, though it is a perfectly decent dance.

The bolero is another species of fandango; its motions and steps very slow and sedate, but growing rather more lively towards the end. In all these dances, the time is beat by castanets, (castanuelas).
FANEUIL HALL; an old building in the town of Boston, North America, held in great veneration by the Americans as the scene of many of the earliest debates and resolves during the war of independency. The Temple-court fames, as attended by females, bearing palms and fans (παλμὼν καὶ πανέμορφος). Phalutes mentions flabiesera as forming part of a Roman fine lady's retinue, and Suetonius describes Augustus as lying, during the heat of summer, in the shade, and fanned by an attendant (ventilante aquis). In the middle ages, fans were used in the churches, sometimes of great size, and richly decorated, to chase away the flies from the holy elements of the eucharist. They are said to have been introduced into England, from Italy, in the reign of Henry VIII.; and, in the reign of Elizabeth, they were framed of very costly materials, the body of ostrich feathers, the handle of gold, silver, or ivory, of curious workmanship.

FANSHAWE, sir richard, an eminent diplomatist and poet, born in 1607. Having studied at Cambridge, he made the grand tour, and, on his return, entered himself of the Inner Temple. He was despatched as envoy to Paris, 1635, in the capacity of resident minister to Madrid. On the breaking out of the civil wars in 1641, he was recalled, and engaged actively in the royal cause, and soon after, being appointed secretary to the prince of Wales, followed the fortunes of his master till the battle of Worcester, when he was taken prisoner. A severe illness shortened the term of his imprisonment, and he was permitted to go at large on bail. On the death of Cromwell, he passed over the channel, in 1659, to the king at Brede, by whom he was knighted. After the restoration, he obtained the mastership of the requests, and was made Latin secretary. In 1661 and 1662, he was employed on two several missions to the court of Lisbon, and, on his return the year following, he was advanced to a seat in the privy council. In 1664, he was sent ambassador to Madrid, and negotiated a peace between England, Spain, and Portugal. Falling suddenly ill of a fever, he died at Madrid, June 16, 1666. His poetical abilities were above mediocrity, as is evinced by his three masques usually called Shakespeare's masques. He published a book of poems called "Fables," and a number of translations and imitations of ancient authors. His chief claims to fame are his several poems addressed to the lady of his choice, to whom he was married, and the "English Military Poem," in which he narrates the history of the late war. His son Samuel, died at Paris in 1665.

FANTEES, or FANTEES, a country of Africa, on the Gold coast, which extends about ninety miles along the shore of the Atlantic, and seventy inland. The inhabitants were called by the most numerous and powerful people situated immediately on the Gold coast; but their power has been almost entirely broken since 1811, by repeated
invasions of the Ashantees. Population estimated at 40,000. The soil is fertile, producing fruits, maize, and palm-wine. The European nations trade here for gold and slaves. The Fantees are bold, cunning, and unscrupulous; their government is aristocratic. Their chief is a supreme judge, governor, attended by a council of old men. Each town has a chief. The small towns are very numerous, and they reckon about 4000 fishermen on the coast. The capital is of the same name, and is situated about nine miles up the country. Lat. 5° 10' N.

FANTUCCI, composer of an Italian song, and the first magistrate of Ravenna, was born there in 1745, of one of the most respectable families. The memory of the former splendour of his native place, and the sight of its decay, excited his attention to the causes of such a change, and he addressed a memoria on the subject to pope Clement XIV., which was afterwards printed. Ravenna owes to him also the completion of a navigable canal. He invented also, in 1780, a hydraulic machine, from which the country people about Ravenna have derived the greatest benefit. An epidemic, which prevailed in the neighbourhood, caused many deaths. Fantiucci opposed particularity for the display of his sagacity and his benevolence to the fullest extent. After he had done everything in his power to mitigate the sufferings of his fellow citizens, he demonstrated, in an excellent work, the necessity of draining the marshes, here exposed to a southern sun. Among his writings should be mentioned his Monumenti Ravennati. After his death appeared at Venice, in 1804, some interesting memoirs, which he had left. We are also indebted to him for a fine edition of the diplomatic papers of the abbé Gaetano Marini.

FARCE (from the French): a dramatic piece of low comic character. Many nations have a standing character for their farces, which is always, therefore, very characteristic; the Spaniards have the gracioso, gallego; the Italians the arlecchina, scarafanocca, &c.; the Germans their Hanswurst, Kasperle, &c. The French farce is derived from the Italian farza, this from the Latin farusin, stuffed, signifying, therefore, a mixture of different things. Adelung says, that, in the middle ages, farza signified, in German, certain songs, which were sung between the prayers on occasions of religious worship; so that it should be a correct term for the naturally signifying an interlude (intermezzo). According to the abbé Paolo Bernardi, a Provençal, it is derived from farzen, a Provençal dish.

FARIA Y SOUSA, MANUEL; a Castilian historian and lyric poet, born 1590, at Suto, in Portugal, of an ancient and illustrious family. In his ninth year, he was sent to the university at Bologna, where he made great progress in the languages and in philosophy. In his fourteenth year, he entered the service of the bishop of Oporto, and under his direction made further improvement in the sciences. A passion for a beautiful girl first awakened his poetical genius. He celebrated her under the name of Albina in his sonnets, married her in 1613, and went to Madrid. But he did not succeed there, and returned to Portugal. He also visited Rome, and gained the notice of Urban VIII., and the learned men at his court, by his extensive knowledge. He returned to Portugal twenty years, and spent the rest of his life entirely to literature, with such ardour as to hasten his end. He died at the age of fifty-nine. Of his writings the best are—Discursos morales y politicos (Madrid, 1623—96, 2 vols.); Comentarios sobre la Lusiada (Madrid, 1639, 2 vols. fol.); Epitome de las Historias Portuguezas; and afterwards El Asia, El Europa, El Africa y El America Portuguesa, each a separate work, the last never printed. We have also a collection of his poems called Fountain of Agapite (Fuentce de Agapite, Rimas variadas, 1644—46). His style was pure and strong, and his descriptions full of vigour.

FARINELLI, one of the greatest singers of the last century, was born at Naples, in 1705. His true name was Carlo Broschi. He received his first instructions in music from his father, and afterwards studied under Porpora, whom he accompanied on several journeys. At the age of seventeen years, he went to Rome, and displayed his clear and full-toned voice in a contest with a celebrated performer on the trumpet, whom he overcame by his strength and perseverance. From thence he went to Bologna, to hear Bernacchi, then the first singer in Italy, and to enjoy the advantage of his instructions. In 1726, he went to Vienna, where the emperor, Charles VI., loaded him with rich presents. That emperor, after hearing him sing, said to him, that he excited astonishment indeed by the compass and beauty of his tones, but that it was not less in his power to affect and charm, if he would study the nature. Farinelli delighted his hearers as much as he had before astonished them. In 1734, he came to London, and by the magic of his singing, so delighted the public, that, according to Laborde, Handel, who was at the head of another company, was obliged to dismiss it, in spite of all his powers. Senesino and Farinelli were both in England at the same time; but, as they sang on the same nights at different theatres, they had no opportunity of hearing each other. Accident once brought them together: Senesino performed the part of a bloody tyrant; Farinelli, that of a hero languishing in chains. Farinelli's first air melted the heart of the cruel tyrant. Senesino, forgetting his character, ran up to his prisoner, and affectionately embraced him.

In 1757, Farinelli went to Paris, where he sung before the king, who rewarded him richly; and after a short residence in France, he went to Madrid. For ten years, he sang every evening before Philip V. and his queen, Elizabeth. This prince, having sunk into a profound melancholy, and neglected public affairs, the queen had recourse to the power of music to restore him. She contrived that there should be a concert in a room of the palace, and invited the king and Farinelli sang one of his most beautiful airs. The king was at first surprised, then deeply moved. At the conclusion of the second air, the king sent for the performer, loaded him with caresses, asked him how he could reward him, and assured him that he would refuse him nothing. Farinelli begged the king to suffer himself to be enslaved, and to appear in the council. From this moment the disease of the king yielded to medicine, and Farinelli had all the honour of his cure. This was the foundation of his unlimited favour. He became first minister, and was created knight of the order of Calatrava; but he never forgot that he was a singer. He never used his influence over the king except to do good. Hence it happened that three kings of Spain—Philip V., Ferdinand VI., and Charles III.—successively honoured him with their favour. After enjoying the highest honours in Spain for twenty years, he was obliged to return to Italy. He built a country house in the neighbourhood of Bologna, with the inscription Amphion Thebas, ego dominum. Here he collected the most extensive musical library ever yet seen, and induced P. Martini to undertake his History of Music. He died 1792, having enjoyed, in a happy situation, the friendship of his fellow citizens, and received many marks of respect from foreign connoisseurs. "He possessed," says
doctor Barneby "every excellence of every great
singer united—in his voice, strength, sweetness, and
compass; in his style, the tender, the graceful, and the
rapid. He had, indeed, such powers as never met,
before or since, in any one human being; powers
that were irresistible, and which subdued every
heart, the learned and the ignorant, the friend and
the foe."

FARMER, RICHARD, a celebrated scholar and
critic, was born at Leicester, May 4, 1735. His
father was a hosier in that town, and after receiving the rudi-
ments of education there, he became a student at
Emmanuel college, Cambridge, where, in 1769, he was
appointed a mathematical tutor. He applied himself particu-
larly to old English literature. In 1766, he published a
well-written and well-received Essay on the Learning
of Shakspere, in which he maintains that the bard
obtained his knowledge of ancient history and myth-
ology from translations, and not from original
authors. This essay obtained a flattering
notice from doctor Johnson. In 1767, he was ap-
pointed a preacher at Whitehall, which gave him
frequent opportunities of residence in London, where
he became a distinguished book collector. He was
soon appointed to the chancellorship and prebendal
stall in the cathedral of Litchfield; and, in 1775, he
was chosen master of Emmanuel college. He was
also appointed a helpful librarian of the university
of Cambridge, and filled, in his turn, the office of
vice-chancellor. Lord North conferred upon him a
prebend, and he was twice offered a bishopric by the
late Mr Pitt, but he preferred a residentialship
of St Paul's, which he exchanged for his prebend. He
published but little. He resisted many authors, in-
vorous works, for which he received their public
acknowledgments and thanks. Doctor Farmer
died at Cambridge, after a long prostrated illness,
Sept. 8, 1797, aged sixty-two years, much respected
for his liberality to the poor, and the various plans
by him suggested for the Improvement of the town
of Cambridge.

FARMERS-GENERAL, in France; a company
which, on condition of paying a certain annual sum
into the treasury, was permitted to levy certain taxes,
particularly the monopolies of salt and tobacco, the
inland tolls (treades), the import duties at Paris, those
on the stamping of gold and silver, &c., on its own
sales, at an annual rate not exceeding ten sous
by farming the monopoly of salt in each city, in the
reign of Francis I., in 1546. In 1599, the farmers-
general were obliged, by Sully, to lay their engage-
ments with the sub-contractors before the government,
and in this way their profits first became known.
Sully, therefore, farmed the monopoly of salt to the
highest bidder, and thus nearly doubled the revenue;
and, by disposing, in the same manner, the other
branches of the public revenue, of which the nobles or
favourites of former kings had obtained possession by
purchase, donation, or other means, he made addi-
tions to the royal revenues. In 1728, the government
undertook several individual leases into the ferme géné-
rale, which, after the lapse of six years, was
renewed by public auction, with a company consist-
ing of sixty members. In 1789, the number of far-
mers-general was forty-four, who paid a rent of 186
millions. They composed a kind of court of finances,
which, in eleven different deputations, administered
the several objects of their contract, the appointmen-
ts of officers, the system of accounts, the procuring of
the salt and tobacco, the collection of the revenues,
and presided over a host of inferior officers. This
mode of managing the public revenues cost the
subjects far more than it produced to the king. The
government, therefore, from the time of Henry IV.,
endeavored to reduce the profit of the farmers-
general, which was estimated by Necker, but evi-
dently too low, at two millions annually. This loss
to the state treasury would have been very moderate
in comparison to that which took place under the old
system, of which Sully asserts, that when the man-
agement of the finances came into his hands, the
auction of the monopoly may 150 millions, while the treasury
received only thirty millions. And, indeed, if Neck-
er's estimate, according to which every farmer-general
would have received only an annual profit of
45,000 livres, was correct, it would not afford a
sufficient reason to explain the hatred which was
generally entertained against this class. It is true,
however, that this system greatly contributed to
the eruption of the revolution, was ascribed, in part, to the nature of the taxes that were
raised in this manner, as will appear in the article
France. Every system of customs and tolls is more
or less odious to the people, on account of the diffi-
culties which it throws in the way of commerce;
and this odium was peculiarly great in the case of
the salt and tobacco monopolies in France, because
of the unequal distribution and great amount of the
taxes paid on these articles. Necker observes, in
the chapter on the wealth accumulated by the
financiers (De l'Administration des Finances, III.,
ch. 18), that the indignation of the people at such duties
was mingled with the fonder sentiment of an execu-
tion that expresses himself with great lenity and precaution
on this head. The people saw clearly that the
wealth of the financiers (among whom must be reck-
oned, besides the collectors-general, the directors of the
finances, which were administered by the govern-
ment itself, the treasurers, and bankers of the court,
but particularly the farmers-general) was amassed
without any merit on the part of the principal per-
sons. The greater portion of them did not even
know how to enjoy their treasures with dignity, but
squandered them in a tasteless as well as offensive
luxury. A man destitute of all talent, ignorant and
stupid, might obtain, by the favour of a person of
influence at court, a place in the administration of the
finances, and he was raised to a state of affluence.
The hatred of the people was increased by the rigour
and rudeness with which the French farmers-general
exacted the duties from the inferior classes of the
people. Without the least regard to humanity, they
enforced their demands, with the utmost severity, on
the country people, and then proceeded against them,
condemning and selling their property by public
auctions. This system of violence was adopted to
compel the more speedy payment of the taxes. The
merciless seizure of the property of the subjects, the
numerous military, occupations, the odious distrain-
lings, presented daily to the eyes of the people the
picture of a country occupied by hostile troops. These
causes produced a hatred of the government deep
and general, and contributed principally to the
breaking out of the revolution.

FARNESI; an illustrious family of Italy, whose
descent may be traced from about the middle of the
thirteenth century, at which time it had possession of
the castle of Farneto, in Orvieto, and gave to the
chapel of Farnese, and the republic of Florence many eminent
heads, among whom was Pietro Farnese, to whom
the Florentines were indebted for an important vic-
tory over the people of Pisa. Pope Paul III., a Farn-
ese, became cardinal, and in 1541 was appointed
an officer of the Holy See, and filled high and
importance of his family, conferring on him
a great many rich establishments, not only on his natural
son, Pietro Luigi, but also on the five sons of the latter.
Paul was particularly eager to secure the promotion
of Pietro Luigi, a man disgraced by every vice, as is
well known to the readers of Benedetto Cellini.
The pope requested the emperor Charles V., to give
his son the duchy of Milan, then in dispute be-
tween the emperor and France. After having of-
erred Charles large sums in vain, he resolved to
erect Parma and Piacenza, which Julius II. had
colonized from the Milan, into a duchi, and, in, August,
1545, bestowed it upon his son. Pietro proceeded to
Piacenza, where he perceived the cities under his
almost innate rage by imposing many burdens on
the nobility, and depriving them of their former
privileges, His tyranny becoming insupportable, the
chiefs of the nobility formed a conspiracy, in
concert with Ferdinand Gonzaga, governor of Milan:
the several barons, who administered the province
undertaking to supply the void, and securing the
entrances, Giovanni Anguissola broke into the apart-
ment of the duke, whose, under the most
infamous pretence of visiting the duke, and secured the
entrances. Therefore agreed upon an armistice with Gonzaga,
and in the mean time endeavour to secure the as-
sumption of France. Julius III., the successor of his
grandfather, out of gratitude to the family of
Farnese, restored to him the duchy of Parma, in
1559, and appointed him gonfaloniere of the church;
but having entered into an alliance with Henry II.,
of France, he drew upon himself the displeasure of
the emperor and the pope, and became involved in
new difficulties, from which he extricated himself
two years afterwards, by an honourable treaty. The
services in which his wife and his son Alessandro ren-
dered to the Spanish government, gained him the
favour of the house of Austria. His wife, Margaret,
natural daughter of the emperor Charles V., had been
appointed to rule over the Low Countries, and had
administered the government with great moderation;
but, in 1567, being superseded by the duke of Alva,
she paid a visit to her husband in Parma, where she
had lived but little, and then retired to Abruzzo.
Ottavio died in 1586, after enduring thirty years of
uninterrupted peace, which he had employed in cor-
recting the disorders of the preceding governments,
and promoting the happiness of his subjects.
He was a man of culture, a scholar, and Marg-
etta, general of Philip II. in Flanders, and third
duke of Parma and Piacenza, succeeded him. While
a child, he had accompanied his mother into the
Low Countries, and was married in his tenth year to
Mary, niece of John, king of Portugal. Indecision,
courage, presence of mind, and strength of body,
stimulated him to engage in the profession of arms.
He served his first campaign under don John of
Austria, and distinguished himself in the battle of
Lepeanto. In 1577, Philip II. called him from Abruz-
zo, where he resided with his mother, to lead back to
don John the Spanish troops, which the latter had
been obliged to disperse from Flanders and the
Netherlands, but in 1583, when the de-
sition of the Spaniards was becoming desperate.
Don John, who had been a long time infirm, died that
year, and Alessandro was made governor. He re-
covered Maestricht and several other cities, and suc-
sceeded in reconciling the Catholic part of the inhab-
iting in the Spanish government. The Protestant
churches, however, formed the union of Utrect, and called in
the duke of Anjou, a brother of Henry III. of France,
to defend them. He appeared at the head of an
army of 25,000 men; but Alessandro was constantly
successful. In the midst of these triumphs, he re-
ceived the news of his father's death, and requested
to be discharged from the Spanish service, in order to
attend to the government of his own dominions;
but was not able to obtain his wish, and died without
ever returning to the country of which he had
become sovereign. Fortunately for the Dutch, who
would hardly have been able long to resist a general
so bold, skillful, and enterprising, a civil war broke
out in France. Alessandro entered France, and
compelled Henry IV. to raise the siege of Paris.
During his absence, Maurice of Nassau had obtained
many successes in the Netherlands, yet, with a mili-
tious and unpatriotic policy, Alessandro kept in touch
both Maurice and Henry IV., and forced the latter,
in 1592, to raise the siege of Rouen. On his return
from that expedition, he received a wound in his arm
before Caudebec, in consequence of the neglect of
which, he died at Arras, in his forty-seventh year.
Ranvolo I., his eldest son, succeeded him as duke. He
inherited none of the heroic qualities of his father,
but was gloomy, severe, suspicious, and nari-
icious. Observing the discontent of the nobles with
his administration, he accused them of having
entered into a conspiracy against him, and, after
having subjected the chiefs to a secret trial, beheaded
them, and concealed their heads in a garret.
This unprecedented cruelty roused the indignation of
many of the Italian princes, and the death of Vin-
cenzo Gonzaga, duke of Mauton, alone prevented the
breaking out of a war. He imprisoned his natural
son Ottavio, who had acquired the favour of the
nation, and left him to perish in cruel confinement.
Ranvolo died in 1622. Notwithstanding the ferocity
of his character, he discovered a taste for letters and
the arts. During his reign the famous theatre of
Parma was built, after the model of the ancients, by
John Battista Aleotti.
His son and successor, Odoardo Farnese (died
1649), possessed considerable talent for satire, a good
deal of eloquence, and still more presumption and
vanity. The ambition of shewing in arms involved
him in wars with Spain and pope Urban VIII., to
whom he was deeply in debt. His excessive cor-
ulence rendered him wholly unfit for war, of which
he was so fond.
Ranvolo II. (died 1694), was not so ferocious as
his grandfather, nor so presumptuous as his father,
but was the weak and ready instrument of unworthy
favourites. One of these, Godereio, a French teacher,
whom he had created prime minister, assassinated
the new bishop of Parma, whom he had refused to
recognize to acknowledge. Indignant at this crime, pope
Innocent X. demolished Castro; and Godereio, de-
feated by the papal troops, lost successively the
favour of his master, his estatcs, and his life.
Odoardo, the eldest son of Ranvolo, was succeeded
by his excessive corpulence. Of his two sons, Fran-
cesco and Antonio, the former succeeded him.
His extreme corpulence precluded all hope of his having
issue. Philip V. of Spain had married Elizabeth
Farnese, daughter of Odoardo, and niece of the duke
Francesco. When it was perceived that the latter
could have no issue, the leading powers of Europe
agreed that a son of Philip and Elizabeth (not King
of Spain) should succeed to the Farnese territories.
Thus they came into the possession of the house of
Bourbon.
Antonio Farnese, eighth duke of Parma, succeeded
his brother Francesco, who was obliged to concur in
these measures without being consulted as to his own
wishes. Antonio also died childless, in consequence of
his age and corpulence at the time of his marriage,
and his whole reign was a series of insults and humili-
ations. After his death, 6000 Spaniards took pos-
session of Parma and Piacenza, in the name of Don
Carlos.
FARNESINA—FARRILL

FARNESINA, LA, OR CASINO FARNESINE; a spot highly distinguished in the history of the fine arts; a palace in Rome, now belonging to the king of Naples, formerly the property of the dukes of Farnese. It was originally built in the time of Leo X., by the architect Baldassare Peruzzi, for an elegant home among the Villa Giulia. In this palace are the celebrated fresco paintings of Galatea, and of the story of Cupid and Psyche, the former painted entirely by the hand of Raphael (il divino Raffaello); the latter by his pupils under his direction. They are among the greatest productions of the fine arts. The picture of the Story of Cupid and Psyche are two of large size, on the ceiling of a large hall. One of them represents the judgment of the pair by Jove, in the presence of all the gods; the other, the nuptials of the lovely couple celebrated by all the Olympian deities. Besides these there are fourteen triangular pictures on the ceiling, and all surrounded with beautiful wreaths. There are also some other valuable paintings in the palace, with which is connected a beautiful garden. The Farnesina is truly a characteristic Roman palace, the temple of the fine arts.

FARO, or FARO ISLANDS; a group of islands in the Northern ocean, lying between Iceland and Shetland, and between 61° 15' and 62° 20' N. latitude. They belong to Denmark, and consist of twenty-five islands, of which seventeen are inhabited. Population, in 1812, 5299.

FAROIL, a generic name, of the king, the main source of his power, was born at Loudounerry, in Ireland, in 1678. In 1694, he was sent to Trinity college, Dublin, whence, however, he either eloped or was expelled, in consequence of irregular conduct. His partiality for the drama induced him to make his appearance on the stage at Dublin; but he displayed little ability as an actor, and he soon relinquished the profession he had so hastily chosen. About 1696, he accompanied his friend Wilks the player to London, where he commenced writer for the stage. His first production was Love in a Bottle, performed at Drury-lane theatre with great success in 1698. About this time, he attracted the favour of lord Orsrey, who procured him a lieutenantcy in his own regiment. In 1700, he added to his reputation by his comedy of The Constant Couple, or the Trip to the Jubilee, in which, under the character of Sir Harry Wildair, he exhibited a lively picture of the foppish fine gentleman of the end of the seventeenth century. In 1701 appeared Sir Harry Wildair, a sequel to the former comedy; and the following year he published a volume of Miscellanies, consisting of poems, letters, essays, &c. The Inconstant, or the Way to Win Him, was the next effort of his pen; and it is amongst those which have kept possession of the state of the world's merit; his masterpiece is borrowed from the Wildgoose Chase of Beaumont and Fletcher. About 1703, he married a lady, who, having fallen in love with him, had represented herself as the heiress of a large fortune, and Faroill was said to have pardoned the deception, and treated her with kindness. In 1706 appeared The Recruiting Officer, one of his most popular plays; and this was succeeded by The Beaux Stratagem, which is reckoned his master-piece, though finished within the short space of six weeks, while labouring under serious indisposition. He dedicated the same to Mrs. Siddons; and though not the mean testimony of the dramatical talents of Faroill, that three of his plays are still favourites with the public. His wit is genuine and spontaneous; and his characters are admirably supported, and drawn from nature. His plots excel in the arrangement of accidents, his language is more adapted to the public. His plays exhibit cannot be defended; but it was the vice of the age rather than the writer, who was much culpable in this respect than Dryden, or Wycherly.

FARRILL, Don Gonzalo O' ; a Spanish lieutenant-general, born at the Havannah, in 1753, of an Irish family settled there. This distinguished soldier and statesman, was educated at the school of Soröe, in France, and entered the Spanish service in 1766. He distinguished himself by his courage and talent at the sieges of Mahon and Gibraltar. In 1789, he made himself acquainted with the organization of the schools of artillery and engineering in France; and was afterwards sent by his government to Berlin, to study the tactics of Frederic the Great in the evolutions of the Prussian infantry. On his return, he was placed at the head of the military school at the Puerto de Santa Maria, near Cadiz, from which some of the best Spanish tacticians and officers, such as Castanos and others, have proceeded. In 1793-4, O'Farrill served under the generals Ventura Caro and Calamera against the French in the Western Pyrenees; in 1795, he served as quarter-master-general in the army of Catalonia, which forced the enemy back to the river Flavia, and penetrated to Perpignan. After the treaty of Bale, he was appointed by Charles IV. to run the boundary line in the Pyrenees. He afterwards travelled through Germany, Switzerland, Holland, and England. In 1808, Ferdinand VII. created him director-general of the artillery, and, in the same year, minister of War. At this time, the king thought it necessary to offer the protection of Napoleon, at Bayonne. When a member of the supreme junta, under the presidency of the Infant don Antonio, O'Farrill, with Azanza, maintained the authority of his sovereign against the threats of Murat. He put a stop to the effusion of blood occasioned by the insurrection in Madrid, May 2. After the departure of the president of the junta, Murat, having desired to obtain a seat and vote in that body, met with a vigorous opposition from O'Farrill, and the ministers Azanza, and Gil: but, finding the majority of his colleagues determined to yield, O'Farrill withdrew. Under the government of Joseph, O'Farrill was again appointed minister of war. In connexion with Azanza and the ministers Mazarrudo and Cabarrus (Aug. 1808), he addressed to Napoleon a bold memorial, the object of which was to secure the Spaniards from the ill consequences of the connexion with France. After the restoration of Ferdinand to the Spanish throne, O'Farrill is, a letter to the king, frankly explained the motives of his conduct; but his property was confiscated, and he himself condemned to death, as a Josephine, or traitor to religion and the king, after having served the state for nearly fifty years. O'Farrill retired to France, where he and Azanza published, at Paris, a tract, in which they pointed out the influence of the connexion with France on the history of Spain; and the pontiff was added as a disinterested witness to the history of the Spanish revolution: Mémoires de Don Miguel Azanza et de Don Gonzalo O’Farrill, et Exposé de Faits qui justifient leur Con- duite politique, depuis Mars, 1808, jusqu’en Avri,
1814.* Of the death of O’Farrill we have no account.

FARTHING; the fourth part of a penny; originally the four thing, or the fourth in the integer one penny.

FASCES, among the ancient Romans; a bundle of polished rods, in the middle of which was an axe, to express the power of life and death.

These fasces, the number of which varied, were carried before the superior magistrates by the lictors. The lictors were obliged to lower the fasces in the presence of the people, as an acknowledgment of its sovereignty. In the city, the axe was laid aside; for the reason of which see Consul, also Dictator.

FASCINATION (Latin fascinare, which is derived from the Greek 

fασκιναί fasáinai, (to kill with a look); the power of charming or bewitching by the eyes, the looks. A belief in fascination appears to have been very general in ancient and modern countries. For the proof of its existence in Greece and Rome, we may refer, among other passages, to the wish of Theocritus (vii. 126), that an old woman might be with him to avert this ill by spitting (ιππόθεσιν), or the complaint of Menalces, in Virgil’s Eclogue 1589), that his look is directed against another. This fascination has been observed on horses, on fowls, and on other animals, and has also been experienced by men, who, by their looks, have been able to produce a fatal effect on those who have been charmed by them. The power of fascination may be attributed, by these and other early writers, to several animals. Wolves, if they see a man, first deprive him of all power of speech—a fact which is alluded to by Virgil (Eclogue ix. 54). A beautiful application of this notion is to be found in Plato’s Republic, where Socrates is represented as thus expressing himself concerning Thrasymachus: “When I heard him, I was astonished; and, had I not seen him before he looked upon me, I should have thought myself struck dumb.” The shadow of a byssan was said to produce the same effect upon a dog; and the former animal was supposed to be so well acquainted with its own virtue, that when it found a man or dog sleeping, it would first stretch its length by the side of the slumberer, and ascertain its comparative mass. The power might be given for its own purposes; if by this poor little animal then, with a piteous cry, runs into the snake’s jaws, and is swallowed at once.” Doctor Barton then combats the suppositions of Lacepede, that the effect thus described as produced, may be owing to an infectious vapour emanating from the body of the snake, or to the animal having been previously bitten by the reptile (which, Lacepede supposes, may also cause its cries, its agitation, and,
FASCINES—FASTING.

finally, its falling down); and that of Blumenbach, that curiosity or fear, occasioned by the hissing and noise of insects, induces the ancients to approach the cause of the noise; and endeavours to show that the notion that any such fascinating power is possessed by any animal, is entirely without foundation. We find, however, the following remarks on this subject, in a very recent work of high reputation (Griffith’s translation of Cuvier’s Animal Kingdom of India): "It has been almost universally believed, that, by certain special emanations, by the fear which they inspire, or even by a sort of magnetic or magic power, the serpents can stupefy and fascinate the prey which they are desirous to obtain. Pliny attributed this kind of asphyxia to a nauseous vapour proceeding from these animals—an opinion which seems to receive confirmation from the facility with which, by the assistance of smell alone, the negroes and native Indians can discover serpents in the savannahs of America." The writer then mentions the opinions of Lacepède and Kalm, and the fact that many travellers have reported both to the terror which they inspire and to certain narcotic emanations from their bodies at particular times,—it must be confessed that this subject is still liable to controversy, and still involved in a considerable degree of obscurity. On the other hand, as the look of the dog stops the progress of the partridge, so we might imagine that the presence of man has a considerable influence over the faculties of some very justly dreaded serpents, and obliges them to obedience by, as it were, a certain kind of fascination. From the most ancient times, certain hordes of Arabia, such as the Psylli and the Marsi, were acquainted with some art of charming and taming serpents. Kempt’s travellers, have left us accounts of the dance which the Indians make the main perform. We also know, beyond any doubt, that the Egyptian jugglers cause the app of the ancients, the bac of the modern Arabs, to play a variety of tricks at the word of command, and that they seem to imitate the magicians of Phœnæo, who pretended to turn their rods into serpents. It is also a remarkable fact, that music has a very considerable influence on these animals, to which we cannot otherwise attribute any large portion of sensibility."

FASCINES; bundles of boughs, twigs, &c., sixteen feet in length, and usually one foot in diameter. They are made on trestles, or any kind of support placed about two feet asunder. The twigs are placed on this machine, drawn tightly together by a cord; the bands are then passed round them at the distance of two feet from each other. The twigs which exceed a given length are cut off or bent back, and the ends are bound into the bundle. Fascines are used in sieges, hydraulic constructions, &c. Very long, thin ones are used in constructing batteries, whence they are called saucisions, or battery-sausages.

FASTIONABLE; one of those words which are peculiar to a particular nation. Fashionable is as much an English word, springing from the English character, as comfortable. Other nations have words to designate what is in fashion. Thus, the French change mode, but fashionable designates much more than this. Fashionable conveys essentially something aristocratic. It means the manner in which the higher classes act, walk, speak, think, dress, travel, &c. Fashionable is applied to every thing, action, and disposition, whilst the corresponding word, with other nations, only designate dress, furniture, and other external material things. The English are an aristocratic nation; not only because they are governed by a powerful aristocracy, but because the whole nation has an aristocratic disposition. Every individual, far from considering the aristocracy as a mere party, is anxious to ally himself to it, or approach it as much as possible, and to procure a permanent connexion with it, by making wealth permanent in his race. This is the case in England in a very different sense from that in which it is true in other countries; and it is not strange that the English should have formed a word expressive of this disposition, which should be adopted by other nations to designate this peculiarity. Even the French, the masters of l’mode, who have dictated, at least since the general peace of 1815, the mode to England also, even they have no word to designate what the English mean by fashionable, which, as we have seen, were implied in the title, ornament, but to manners, disposition, and general habits. The French have therefore adopted this word. Thus a weekly publication appears at Paris, under the title La Mode, Revue Fashionable.

FASHION PIECES; the utmost or hindmost timbers of a ship, which terminate the breadth, and form the shape of the stern. The stern-post, and to the extremity of the wing transom by a rabbit, and a number of strong nails or spikes driven from without.

FASTI; marble tables in Rome, on which were inscribed either the succession of the annual games and festivals, or the names of the consuls, dictators, &c. The former, the lesser fasti (fasti minores), were nothing more than calendars, indicating the times of the festivals. These were at first known only to the pontifices, who announced them to the people, to promote political purposes of their own, or of the patricians. B. C. 204, C. Plautius, who had become consul, and lately discharged the command against the Carthaginians, exposed them to the people. From this time they were publicly known.

FASTING; the partial or total abstinence of man and animals from the ordinary requisite supply of aliment, by which is to be understood that quantity which is adapted to preserve them in a healthy and vigorous condition. The principal instances of fasting, on record, are those which have arisen from shipwreck and similar accidents, from peculiar mental afflictions, or from the body being in a morbid state, or from the two latter combined. In a melancholy and well-authenticated instance of shipwreck, which occurred in the year 1705, seventy-two individuals were compelled to take shelter in the shrouds of the vessel, while the hull was covered by the sea, where all survived, during five days, without a morsel of food; but it appears that they were enabled to catch a few drops of rain as it fell, and some of them were drenched with water from the waves. Unfortunately authenticated in the case of Thomas Travers, who, on Saturday, the fourth of December, 1784, entered a coal-pit 270 feet deep, the sides of which immediately fell in. The quantity of earth was so great, that six days were occupied in removing it; and no one could at first venture to penetrate the pit, on account of the foul air
which was evidently present. Some miners, bolder than their companions, made a new attempt on Fri-
day, and, guided by the traces of his work, found the same success, and obtained a capital.
He could raise his head, but his hands and feet were cold, and pulsation almost extinct. Immediate relief
was afforded; but next morning he became indifferent
about food, and, having announced his own dissolu-
tion, expired in a few minutes, on Sunday afternoon,
after a whole store of days. This fact quite justifies
the opinion of Hippocrates, though it is not corroborated
by others, namely, that fasting less than seven
days is not invariably fatal; but, after that period,
notwithstanding individuals may survive and take
food, their previous abstinence will occasion death.
It is to be observed that here was an instance of
absolute privation. In the year 1768, captain Ken-
nedy was shipwrecked, with twelve companions,
in the West Indies. They preserved a small quantity
of provisions, which were totally consumed in seven
days, amidst extraordinary distresses. During eight
successive days, that is to say, from the 17th of
September to the 24th of the same month, the
Moors and their prisoners subsisted on a single
ounce and a quarter of biscuit daily; and sometimes
when a bird, the size of a pigeon, was accidentally
cought, it served for a meal to the whole crew.
We shall not be much surprised, therefore, at the
experiments made by some people on themselves,
from which it appeared that fasting on half a pound
of bread daily, with a pint of liquid, was productive
of no inconvenience. Still there is an infinite dif-
ference between all this and absolute privation.
Sea-
weed has afforded many grateful meals to famished
sailors. In the year 1692, two brothers, accidentally
abandoned on an islet in a lake of Norway, subsisted
twelve days on grass and sorrel. Few instances can
be given of absolute privation both of solids and
liquids; but, in the case above referred to, where
seventy-two persons took shelter in the shrords of a
vessel, fourteen actually survived during twenty-three
days, without food, and fasting without relief.
Calabria, in the year 1783, relates that he saw two
girls who were miraculously preserved in the ruins
of a house. One had survived eleven entire days, and
the other six, totally deprived of food.
It must not escape observation, that the difference
between absolute privation and a supply of any
portion of it is incommensurable. The sufferer
may almost be said of water; for it materially con-
tributes to preserve life; and hence the difficulties
of ascertaining what is truly protracted fasting. The
negro couriers, who traverse the deserts on the
western coast of Africa, perform long and fatiguing
journeys on about four ounces of food daily. It is
said that, in common situations, both they and the
Moors are frequently seen to subsist eight days on
three ounces of gum daily, without sensible dimin-
ution of health or vigour; and some maintain that
they can fast three days without any inconvenience.
There is a species of water, at his house, which
consists only of a pound of gum, a little grilled rice, and
several ounces of hard animal jelly, compounded with
a fourth of its weight in gum. This substance is
decidedly nutritious; for we are told that, when the
whole provisions of a caravan had been exhausted in the
deserts between Abyssinia and Egypt, a thousand
persons subsisted on gum, which was found to form
part of the merchandise; and the caravan reached
Cairo in safety, without any remarkable accidents
from hunger or disease. The compound of the negro
couriers may possess particular qualities in repelling
hunger, such as that which, according to Sclater,
the surviving inhabitants of Great Britain, is said to have proved
sufficient, if equivalent to a bean, for a whole day;
and some of the American Indians, when engaged in
long excursions, have expedients for blunting the keen
sensations which they would otherwise expe-
rience. A composition of calcined shells and tobacco
juice is formed into a mass, from which, when dry,
pills of a proper size, to be kept dissolving between
the gum and the lip, are made. Long and perilous
voyages have been accomplished without more than
a ship biscuit divided into a number of pieces daily.
One whole store of provisions consisted of a single
man of war, which foundered at sea in the year 1789,
sailed 800 miles in a yawl, during a period of ten or
fifteen days, while their sole provisions consisted of a
twelfth part of a biscuit for each of two meals a-day,
and a glass of water. Still more perilous was the
voyage of captain Bligh and eighteen men, of the
Bounty, who sailed a great portion of 3600 miles in
an open boat, in 1789, as related in the following
sentence:—
-And, when at length they were at the greatest
ought and a quarter of biscuit daily; and sometimes
when a bird, the size of a pigeon, was accidentally
cought, it served for a meal to the whole crew.
We shall not be much surprised, therefore, at the
experiments made by some people on themselves,
from which it appeared that fasting on half a pound
of bread daily, with a pint of liquid, was productive
of no inconvenience. Still there is an infinite dif-
ference between all this and absolute privation.
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sufficient, if equivalent to a bean, for a whole day;
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juice is formed into a mass, from which, when dry,
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voyages have been accomplished without more than
a ship biscuit divided into a number of pieces daily.
One whole store of provisions consisted of a single
man of war, which foundered at sea in the year 1789,
sailed 800 miles in a yawl, during a period of ten or
fifteen days, while their sole provisions consisted of a
twelfth part of a biscuit for each of two meals a-day,
was attended with manifest mental imbecility.—

Nevertheless, with proper regimen, he so far re-
covered, as in a few days to be enabled to walk
across his room; and a clergyman who had previ-
ously been admitted to visit him, dispelled his reli-
gious aberrations; but on the seventh day from the
commencement of this system, he expired, and it
explained on the seventy-eighth from the date of
his abstinence. An analogous case has been
quoted by the same physician, of an insane person,
who survived forty-seven days on a pint and a half
of water daily, during which time he obstinately
stood up and walked about. From extreme weak-
ness, he lay down during the remainder, still
refusing anything but water; nor did this extraor-
dinary abstinence prove fatal. Perhaps we should
find many examples of fasting for a much longer
period, on recurring to morbid conditions of the
body; such as that of Janet M. Leod, a young Scot-
tish female, who, after epilepsy and fever, remained
five years in bed, seldom speaking, and receiving
food only by constraint. At length, she obstinately
refused all sustenance, her jaws became locked, and,
in attempting to force them open, two of her teeth
were broken. A small quantity of liquid was intro-
duced by the aperture, none of which was swallowed;
and dough made of oatmeal was likewise rejected.
She slept much, and her head was bent down to her
breast. In this deplorable state, the relatives of
the patient declared she continued to subsist four
years, without their being sensible of her receiving any ali-
ment, except a little water; but, after a longer inter-
val, she began to revive, and subsisted on crumbs of
bread, with milk or water sucked from the palm of
her hand. It is not evident that her convalescence
ever was complete; and it rather is to be inferred that
she always remained in a debilitated condition.
After these extraordinary instances, chiefly belonging
to our own era, to which many more might be added,
we shall probably be less incredulous in listening
to the accounts of the older authors.

In regard to the sensations excited by protracted
fasting, and its effects on the person of the sufferer,
there is a difference resulting from the vigour both of
body and mind, to which the influence of climate may
be, and must itself be, the most direct cause. Famine
consequences frequently ensue. At first, every substance
is ravenously devoured, to appease the cravings of
hunger; every animal, the most loathsome reptiles,
are welcome sustenance; and a paste is baked by the
New Hollanders, composed of ants and worms, inter-
mixed with the bark of trees. John Lery, who en-
trusted the extremity of famine in a voyage to Brazil,
empirically declared, that a mouse was more prized
in the ship than an ox had been ashore; and he also
informs us, that three or four crowns were paid for
each. The natives of New Caledonia swallow lumps
of earth to satisfy their hunger, and tie ligatures,
continually increasing in tightness, around the abdomen.
They seem to do so with impunity, although the custom
of eating earth, in Java, which is done to reduce personal corpulence, is slowly, but invari-
ably destructive. Last of all, recourse is had to hu-
man flesh, instances of which have occurred in all
countries of the globe. Food consists of flesh, from
sieves, shipwreck, or the failure of expected
crops of grain. During this period, a material alter-
ation is taking place in the mind: men become wild
and ferocious; they view each other with malevo-
ence; they are quarrelsome, turbulent, and equally
regardful of their own fate as of the safety of their
neighbours; they actually resemble so many beasts of
prey.

The sensations of hunger from protracted fasting
are not unlike in all; or it may be, that immediate
langor operates strongly on those by whom it is not
so severely felt. But it is certain that, after a parti-
cular time, little inclination for food is experienced,
though great desire remains of quenching thirst.

Captain Inglefield, of the Centaur, expresses his
consultatory feelings on seeing one of his companions
in this state, as follows:—'Jeremiah, with a face more
terrible than the the most frightful nightmare, or the
imagination had pictured. A survivor of that miser-
able shipwreck, during which so many people hung
twenty-three days in the shrouds, observes, that he
did not suffer much during the first three from want
of food; that, after more had elapsed, he was sur-
faced by the smell of the same. From extreme
weakness he lay down during the remainder, still
refusing anything but water; nor did this extraor-
dinary abstinence prove fatal. Perhaps we should
find many examples of fasting for a much longer
period, on recurring to morbid conditions of the
body; such as that of Janet M. Leod, a young Scot-
tish female, who, after epilepsy and fever, remained
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countries of the globe. Food consists of flesh, from
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crops of grain. During this period, a material alter-

on tradition, except that of the day of expiation, which was appointed by Moses. We find, however, many instances of occasional fasting in the Old Testament, and it is probable that the Egyptians prepared themselves by fasting for the festa of the great festival of Isis. So in the Thesmophoria at Athens, and in the rites of Ceres in Rome, fasting was a part of the ceremony. Neither Christ nor his apostles give any precept respecting fasting. It was probably, however, early practised by the Christians as a private act of devotion. Note that the fasting is spoken of in the most ancient times, except that on the day of crucifixion. The church of Rome distinguishes between days of fasting and of abstinence. The former are—1. The forty days of Lent; 2. the Ember days, being the Wednesday, Friday, and Saturday of the first week in Lent, of Whitsun week, of the third week in September, and of the third week in Advent; 3. the Wednesdays and Thursdays of the four weeks in Advent: 4. the vigils or eves of Whitsuntide; of the feasts of St Peter and St Paul; of the Assumption of the Virgin; of All Saints; and of Christmas day. When fasting is prescribed, the ordinance of Parliament prohibiting fasts on fast days is designed for the encouragement of fisheries and navigation. See Festivals, and Lent.

FAT OF ANIMALS. Animal oils and fats, as they differ only in the fluidity of the former at common temperatures, while the latter are generally concrete, will be treated of together in the present article. Of animal oils, whale oil and sperm oil are most generally known in this country; and among the principal varieties of fat are spermacent oil, butter, tallow, lard, and suet. Whale oil, or train oil, is extracted from the blubber of the whale (principally the balaenoptera macrophysus) by hot water or by distillation in the factory. To obtain the oil, the blubber is melted in large copper vessels. A large quantity of water separates, and on the surface there floats a solid matter, called fens, which is probably congelated albumen. The more moderate the heat, and the shorter its duration, the paler and better is the oil; but this is attended with a diminution in its quantity. The deep colour is owing partly to too great heat in the boiling, and partly to blood and other impurities, which are unavoidably mixed with it. What is extracted in Greenland is perfectly pale and limpid, and free from small particles with a pure and bright flame. Whale oil requires ten days to close-reason to ripen the action of the air. It is rendered more fluid and combustible, by adding to it a little cold-drawn linseed oil; but it cannot, by any treatment, be made so fit for burning in lamps as spermacent oil. The best way of using it is found to be by converting it into a soap for the manufacture of the soaps; but they are not, however, by the use of chloride of lime. Its specific gravity is 0.9319. It boils at 640 Fahrenheit, and may be distilled; but its properties are then materially altered, or, rather, it becomes a new substance, its specific gravity being diminished to 0.698, its boiling point lowered, and its inflammability increased. Whale oil consists of carbon 68.87, oxygen 10.10, and hydrogen 15.03. Sperm oil, or spermacent oil, forms part of the oil substance found in the cranium of the spermacent whale, or phystera macrophysus. The oil is separated by boiling, according to Doctor Ure, of carbon 78, oxygen 10.50, and hydrogen 11.80.

The fat of animals, or more solid animal oils, may be separated from the membraneous and other substances with which it is united, by melting it at a gentle heat, with the addition of a small quantity of water. Fat thus prepared is called lard, when of a soft consistence, and tallow, when harder. It is insipid, and sometimes free from smell; at others, it has a distinct and peculiar odour. It is apt to become rancid, however, by keeping—a change connected with the absorption of oxygen. It is insoluble in pure water, or, being boiled with a small quantity of water, it is observed on the Saturday before. The Greek church observes four principal fasts: that of Lent; one beginning in the week after Whitsuntide; one for a fortnight before the Ascension; one forty days before Christmas. The church of England appoints the following fixed days for fasting and abstinence, between which no difference is made: 1. The forty days of Lent; 2. the Ember days, at the four seasons; 3. the three Rogation days before Holy Thursday; 4. Every Friday except Christmas day. Other days of fasting are occasionally appointed by royal proclamation. The church, however, gives no directions concerning fasts and abstinence, and the ordinance of Parliament prohibiting fasts on fast days is designed for the encouragement of fisheries and navigation. See Festivals, and Lent.

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the Fata Morgana, are proved by the accurate observations of the coast and town of Reggio, by P. Minasi, to be derived from objects on shore. If, in addition to the circumstances we before described, the atmosphere be highly impregnated with vapours and dense exhalations, not previously dispersed by the action of the wind and waves, or ruffled by the sun, it then happens, that, in this vapour, as in a curtain extended along the channel to the height of above forty palms, and nearly down to the sea, the objects behind the screen of the same objects are not only reflected from the surface of the sea, but likewise in the air, though not so distinctly or well defined as the former objects on the sea. Lastly, if the air be slightly hazy and opaque, and at the same time dewy, and adapted to form the iris, then the above-mentioned objects will appear only at the surface of the sea, as in the first case; but all vividly coloured or fringed with red, green, blue, and other prismatic colours. As the day advances, the fairy scene gradually disappears. A very singular instance of atmospheric refraction is described in the Philosophical Transactions, as having taken place at Hounslow Heath, 15 miles from London, which was seen between forty and fifty miles distant from that of Sussex, appeared suddenly close to the English shore. The sailors and fishermen crowded down to the beach, scarcely believing their own eyes; but at length they began to recognise several of the French cliffs, and pointed out places they had been accustomed to visit. Pointed from the summit of the eastern cliff or hill, a most beautiful scene presented itself; at one glance the spectators could see Dungeness, Dover cliffs, and the French coast, all along from Calais to St. Valery; and, as some affirmed, as far to the westward even as Dieppe. By the telescope, the French fishing-boats were plainly seen at anchor; and the different colours of the land on the heights, with the buildings, were perfectly discernible. This refractive power of the atmosphere was probably produced by a diminution of the density of its lower stratum, in consequence of the increase of heat communicated to it by the rays of the sun, powerfully reflected from the surface of the earth. (See Mirrage.) Similar appearances occur also in the great sandy plains of Persia, of Asiatic Tartary, in Lower Egypt, on the plains of Mexico in North America, &c. See Biot's Astronomic Phys., Paris, 1810, 3 vols., 1st vol.

FATES (in Latin, Parvo; in Greek, Mêra); the names of three who spin the thread of human life. Homer mentions neither their separate names nor their number. The appellation Clotho (the spinner) was probably at first common to them all. As they were three in number, and poetry endeavoured to designate them more precisely, Clotho became a proper name, as did also Atropos and Lachesis. Clotho seems to indicate nothing peculiar; Atropos signifies unalterable fate; Lachesis, lot or chance; so that all three refer to the same subject under different points of view. In Homer and Hesiod, they appear as goddesses of human fate and individual destiny, both in life and death. Among the lyric poets, they have a general power over events, and are always present where anything is to be decided (from partire, Greek μήρα). In the narrowest signification, they are the goddesses of death, as of that destiny which closes the scene with all. In this capacity, they belong to the infernal world, the daughters of Earth. As goddesses of fate, they are the servants of Jupiter, and the offspring of Jupiter and Themis. The former genealogy is the more modern. As daughters of Jupiter, they have a share in the decisions of fate, and are commissioned by him to execute his commands. They regulate the future events in the life of man. They know and predict what is yet to happen. They sing the fate of mortals, and at the same time keep their spindle in motion, and are free from change. A peculiar department is assigned to each of them. Clotho, the first, the second speaks, and the third spins out the thread; or Atropos represents the past, Lachesis the future, and Clotho the present; and thus they point to the beginning, the middle, or continuance, and the end of life. Lachesis is represented with a spindle, Clotho with the thread, and Atropos with the scissors, with which she cuts it off. We find, in the northern mythology, three beautiful virgins, the Normen, who determine the fate of men. Their names are Urð (the past), Vafnande (the present), and Skuld (the future). See Northern Mythology.

FAITHOM; a measure of six feet, used to regulate the length of the cables, rigging, &c., and to divide the lead (or sounding) lines, &c.

FAUJAS-DE-SAINT-FOEND, Bâthleimi, a celebrated geologist, was born at Paris in 1750. He visited almost all the countries of Europe and the new world, devoting his attention especially to geological phenomena and volcanic productions. His researches threw new light on this subject. In his Recherches sur les Volcans éteints du Vivarais et du Velai (1788), he developed his views on the origin of volcanoes, which he attributed to the contact of water and subterranean fire. His researches made him incline to the opinion of those geologists who consider all transformations as of volcanic origin. This opinion he supports in his Essais géologiques. Of his numerous works should be mentioned his Histoire naturelle des Roches de Trapp (1788, and new edition, 1813), Hist. nat. de la Montagne de Maastricht (1799 to 1808, 10 numbers, folio), and his Travels through Holland, Scotland, and the Hebrides (1797, 2 vols.), which contains discriminating observations on the manners of those countries.

FAUN; the name given to the Roman gods of the woods, i.e., a kind of spirits inhabiting the forests and groves, who were particularly reverenced by the cultivators of the ground. Their form was punitively human, but with a short goat's tail, pointed ears and projecting horns. They were clothed in the skin of a goat, or that of some other beast. They are sometimes crowned with vine branches, because, like the satyrs, they belonged to the train of Bacchus. Among the most famous antique statues of fauns are the one in the old church and the young faun represented as a flute-player. The poets describe them as deformed and sensual; and we recognise this character in the ancient statues which have come down to us. They were considered as the sons of Faunes, who was reverenced as one of the most ancient kings of Latium, and was celebrated for his power of prophecy. He answers to the Pan of the Greeks; and his sons by Fatua, or Fauna, correspond with the Grecian Panes, as guardian gods of the herds, woods, and fields.

FAUNA (from Faun, q. v.); a collective word, signifying all the mammals of a certain region, and also the description of them, corresponding to the word flora in respect to plants. Thus we have Harlan's Fauna Americana.

FAUST, or FUST, John; a goldsmith of Münts, one of the three artists to whom the invention of printing is generally ascribed. It is, however, doubtful if he held more than a right. Adolph Schaeffer, who had previously made some attempts with carved blocks at Strasbourg. The third person concerned was Schaeffer, who married the daughter of Faust, and who is allowed the honour of having invented punches and matrices, by means of which this grand art was carried to perfection. The first-fruit
of the new process was Durandi Rationale Distiorum Officiorum, published by Faust and Schaeffer in 1459, which was followed, some years later, by the Catholic Johannis Jannensis; after which, in 1462, succeeded another, by the same Faust and Schaeffer, containing early specimens of typography. These works were, however, preceded by a Bible, Psalter, and other books, executed with characters engraved on wood, and by a mechanism which Faust and Schaeffer possessed in common with Gutenberg. It has been ascertained that for a long time previous to this, the latter was engaged in the printing of books. The former was thereupon arrested and imprisoned for a second edition of his Bible of 1462, he was arrested on the supposition that he had printed that work of magic; but this story appears to be mere fiction. There is reason to believe that he died of the plague in 1466, as the name of Schaeffer alone is found in the books printed after that time at Ments. According to some German writers, the celebrated romance of Doctor Faustus, the subject of so much traditionally horror and admiration, and which has been immortalized by the genius of Goethe, originated in the malice of the monks towards Faust, whose employment of printing deprived them of their gains as copiers, and copied himself to sell exclusively in their hands. There seems, however, to be but little ground for this belief.

FAUST, DOCTOR JOHN (a very different person from the printer); a celebrated dealer in the black art, who lived in the beginning of the sixteenth century. Doctor Faust has become, in Germany, one of those standing national characters, which represents a whole class of persons, and to whom every new invention and strange adventure is constantly attributed. According to some accounts, he was born at Knittlingen, in Swabia; others make him a native of Anhalt; others of Brandenburg. The first account is the most probable. He was the son of a peasant, who sent him to study at Wittemberg. In his sixteenth year, he went to Ingolstadt, and studied theology, became in three years a magister, but abandoned theology, and began the study of medicine, astrology, and magic, in which he likewise instructed his familiar, John Wagner, the son of a clergyman at Wasserburg. After doctor Faust had spent a rich inheritance, left him by his uncle, probably in chemical and alchemical experiments, he, according to tradition, made use of his power to conjure up spirits, and entered into a contract with the devil for the seven years. Mephisto phales was given him as a servant, with whom he travelled about, enjoyed life in all its forms, and surprised people by working wonders; for instance, he rode on a wine barrel out of Auerbach's cellar in Leipzig, in 1523, where an old painting representing the scene is said to be seen. The evil spirit finally carried him off near the village of Rinnlich, between twelve and one o'clock at night. This is the story as it is found in a work by G. R. Wiedemann, True History of the horrible Sins of Doctor John Faustus, Hamburg, 1599; and in another old book, The League of Doctor Faust, the Exchanter and Sorcerer known throughout the World, with the Devil, his adventurous Life and terrible End, printed at Cologne and Nuremberg. Some have thought that this whole story was invented by the monks, to calumniate doctor Faust, the inventor of printing, because the profits which they had been accustomed to make by copying, he divided amongst his pupils, and by his invention; but this is not at all probable. Others have entirely disbelieved his existence; but Melan tho, Trithem, and others knew him personally. Perhaps he was a chemist more acquainted than others of his age with his science. Even now, doctor Faustus, and his familiar, Wagner, play a conspicuous part in the puppet shows of Germany; and this legend has not only remained among the lower classes, but is incorporated with some of the finest productions of the German muse. The most distinguished poems on this subject are Klinger's Faust's Lied, Thoren and Hohenfahrt (Faust's Life, Deeds, and Descent to Hell), and Goethe's celebrated Faust. The latter is one of the greatest poems the Germans possess, written in the full vigour of the author's genius.

FAUSTINA; a wife of the emperor Antoninus Pius, and, 2. her daughter, who was afterwards married to the emperor Marcus Aurelius Antoninus. The historians of the period have interspersed their descriptions of the flourishing state of the empire under these Antonines with scandalous anecdotes of their wives. But, to the honour of the younger Faustina, who was accused of the grossest excesses, it cannot be denied that her own husband, Marcus Aurelius, who, by his excellent character, and his devotion to philosophy, obtained the surname of the philosopher, gave her the credit of being an exemplary wife. Wieland has attempted to defend her against the invectives of the historians of the emperors.

FAUX JOUR (French) signifies false light; an expression in the fine arts. If a picture is placed so that the light falls upon it from a different side from that from which the painter intended to represent the light in the picture as falling upon objects, or if the picture is placed so that it is covered with a bright glare, and nothing can be distinguished, the picture is said to be in faux jour.

FAVART, CHARLES SIMON, creator of the fine comic opera in France, born 1710, was the son of a pastry-cook. Favart received part of his education at the college of Louis-le-Grand, and devoted himself to poetical pursuits. His first poem—La France délivrée par la Puëcelle d'Orléans, obtained the prize in the Jeux floraux. But his poetical reputation rests principally on his numerous productions for the opera aux Italiens and the comic opera. The latter, with which Favart was closely connected, was suppressed in 1745, through the intrigues of the former, which was jealous of its success; and Favart was obliged to assume the direction of a company of itinerant actors, which followed Marshal Saxé into Flanders. He was often obliged to use his talents before an engagement or any other important event, to encourage the company. An instance of this was his Meleager, written before the battle of Rocoux, when the poet, at the request of the marshal, hastily composed some verses, announcing victory in the impending contest, which were sung by a favourite actress, during the interval between the acts. Favart had the grief to see that the charms of his wife had conquered the victor of Forneney, who, on his advance being repulsed, basely used his power to persecute her husband, and cause her, by means of a lettre de cachet, to be confined more than a year in a convent in the country, which she left at length only on condition of submission. He afterwards returned to the capital, and applied himself assiduously to dramatic poetry. He wrote at this period, in conjunction with the abbé Viosenon, who was his ami de la maison, a number of his best productions, in the composition of which Madame Favart also participated. In most of them, Favart himself formed the plan, the style, characters, and episodes, and left his admirer to dispute with him about the strokes of naiveté and feminine spirituallity; but from the ami de la maison, who was much overrated in his time, came those affected quibbles and cold conceits which occur in some of Favart's works. The number of his works is very great; and many of them, as, for instance, Sorcière 111., or the Three Witches, Ninette à la Cour, La Chevrehue de l'Espir, l'Astro-
FAVIER; an eminent French statesman, born at Toulouse, in the beginning of the eighteenth century. At the age of twenty-five, he succeeded his father as secretary-general to the states of Languedoc; but he was obliged, in consequence of youthful extravagance, to sell the office. He then applied himself to the study of history and politics, and was nominatedsecretary of the Chancery to the ambas-
dor general to France, d'Argenson, after whose death he was patronized by M. d'Argenson. Under the direction of that minister, he wrote Réflexions contre le Traité de 1756 (between France and Austria), one of the best diplomatic treatises which had then appeared. He went out of office when d'Argenson left the ministry, but was employed on several important commissions by Louis XV., and in 1762, was appointed ambassador to the court of St. James. He was, at last, arrested at Hamburg, and taken to Paris. M. de Broglie procured his liberation in 1773; and, on the accession of Louis XVI., he obtained a pension of 6,000 livres, but was not afterwards employed. He died in 1793, M. de Ségur has collected a part of the works of Favart in his Recueils de la Correspondance et des Notes de l'Europe pendant les Regnes de Louis XIV. et de Louis XVI., (1793, 2 vols., 8vo, and 1802, 3 vols.). Favart also published several pieces himself; and he was engaged with Fréron, J. J. Rousseau, the abbé Arnauld, Suard, and others, in conducting the Journal des Études et des Sciences.

FAWES, Guy, See Gunpowder Plot.

FAVARD, DIEGO DE SALVEDRA, a statesman, and one of the best Spanish prose writers, was born, towards the end of the sixteenth century, of a noble family of the kingdom of Murcia, and studied at Salamanca, where he was made doctor of law. He went, with the Spanish ambassador Borgio, to Rome, as secretary for Neapolitan affairs, was afterwards Spanish agent at the Roman court, and repaired to Lisbon in 1636, to be present at the election of Ferdin-and king of the Romans. After other diplomatic employments, he was sent, by Philip IV., to the congress at Munster, in 1643. He was recalled in 1646, and was appointed a member of the supreme council of the Indies, at Madrid, where he died in 1648. His works are, Idea de un Principio político Chrístiano, representado en cien Empresas, with emblems (Monaco, 1649), and often republished, also translated into Italian, French, Latin and German; likewise Corona Gothic, Castellana y Austriaca políticamente ilustrada. This valuable and interesting, yet classical specimen of historical research, was to have consisted of three parts; but one only was completed. Alphonsino Nunes de Castro added a miserable con-
tinuation. He also wrote República Literaria (a humorous and sometimes satirical comparison of the old with the new distinguished Spanish writers), and Locuras de Europa, Dialogo posthumo. His complete works were published at Antwerp in 1695.

FAYAL; one of the Azores; lon. 28° 41' W.; lat. 38° 31' N. It is of a circular form, about ten miles in diameter, rising abruptly from the sea, reaching, in the centre, to the height of 3000 feet. The climate is good, and the air always mild and pure. The cold of winter is never felt, and the heat of summer is tempered by refreshing winds. It produces plenty of pasture for cattle; birds are numerous, and plenty of fish is caught on the coast. The chief place is Villa Horta, or Orta. The origin of the island is volcanic. The soil is very fertile. It produces, in abundance, wheat, maize, flax, and almost all the fruits of Europe. Oranges and lemons abound. It has an important commerce with Europe and America. The population is reckoned at 22,000, who are said to be distinguished for mildness, simplicity and honesty.

FAYENCE; See Faïence.

FAYET, MAUROLD, See La Fayette.

FAYETTE, MARIE MADELINE, COUNTESS DE LA. See La Fayette.

FAYETTEVILLE, a post-town of North Carolina, capital of Cumberland county, near the west bank of the north-west branch of Cape Fear river; population in 1830, 3532. It is one of the most flourishing towns in North Carolina, and has a pleasant and advantageous situation at the head of steamboat navigation. The situation is healthful, and favourable for trade and manufactures. The land around is considerably elevated, and the soil dry and barren, except on the water courses, where it is rich. This town was settled chiefly by Scottish Highlanders.

FAYOUM; a province of the northern part of Central Egypt, separated by mountains from the Libyan desert. Its superficies contains about 500 square miles. The soil is alluvial, and, in the north, particularly fertile. The western part, in former times well cultivated, is at present covered with sand. Fayoum is irrigated by canals coming from the canals of the Nile; but they are badly taken care of, and the province cannot any longer compete with the Delta. In the best watered parts, rice, barley, rye, and flax are cultivated. The linen of Fayoum is highly esteemed. There are, also, cotton manufactories, which consume all the cotton raised in Fayoum, and the cotton brought from Upper and Lower Egypt. Commerce is carried on with Cairo by caravans, which weekly leave Tamieh with shaws, otto of roses, figs, dates, linen cloths, &c., and exchange them for cotton, soap, cloth, &c., from Europe. The Memoirs of Savary, duke of Rovigo, describe the conquest of Fayoum by general Desaix.

FEARN, a parish in Forfarshire, six miles in length and two in breadth, lying at the foot of the Grampian Hills, and watered by the Noran and Cruik, on the banks of the former of which are the ruins of Vain castle, once the residence of the celebrated Cardinal Beaton. The surface is partly appropriated to pastureage and plantations, and partly to tillage; the latter grounds are very productive, having the advantage of a fine slope to the southward. Game and pests are plentiful. The inhabitants of this parish, led on by a gallant youth of seventeen, inflected a severe chastisement on the Ketrin, or Highland robbers, on their last inroad in 1710; during which time they slew their chief in single combat. Population in 1831, 450.

FEARN; a parish and village in Ross-shire, the latter of which is situated adjacent to the ruins of an old abbey, founded by the first earl of Ross, whose
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descendants, as well as all of the name of Ross, still bury there. The parish is about two miles square, and bounded on the east by the Moray Firth, where are the villages of Balintore and Hilltown, chiefly occupied by those engaged in the herring fishery. Each village is an extensive parish. The parish is noted for its large eels, and as the resorts of various kinds of aquatic fowl. At Cadboll on the coast, are quarries of excellent freestone. Population in 1831, 1695.

FEASTS OF THE ANCIENTS. Homer, in his Odyssey (I. 225 et seq.), speaks of two kinds of feasts: one (Elaiapine) given by a person of his own expense; the other (Eranos) made at the common cost of those who partook of it. At the former there were 1. the proper guests invited by slaves; 2. the shadows, as they were called (exai, umbra), i.e., persons brought in by the invited guests; and, 3. the parasites, a kind of sponging buffoons, who came in without invitation from the host or guests. Among the Greeks, men only were invited; but among the Romans, women also. The number of the guests was not limited. Before they went to table, their feet were washed and anointed. At table, it was the custom, in the earlier ages, to sit; but afterwards they reclined in the following manner: Round the table were arranged couches or sofas, made often of cedar, or inlaid with ivory, adorned with gold and silver, and covered with costly cloths. The person reclining had the upper part of his body resting on his left elbow, the rest of his body stretched out straight, or a little curved, and sometimes, for greater comfort, cushions under his back. The first, at the upper end of the couch, extended his feet behind the back of the one reclining next him; the second lay with his head near the bosom of the first, and stretched out his feet behind the back of the third, and so on. There was, unquestionably, a certain rank for the different places; but it is not certain what was the order observed. As the table was not, as with us, covered with a table-cloth, and the viands (which, as knives and forks were not then in use, were carved beforehand, and cut into small pieces) were laid on the bare table, this was wiped, after each course, with sponges, and water was handed round to the guests to wash their hands. Each guest brought his napkin with him. There were three courses:—The first, in which only stimulating viands were offered to excite the appetite; the second, or chief course, which consisted of a greater variety of dishes, more curiously prepared; and the dessert, in which the delicacies were brought on. During the entertainment, the guests wore white garments, decorated themselves with garlands, and often anointed the head, beard, and breast with fragrant oils. The banqueting room was also adorned with garlands and roses, which were hung over the table, as the emblem of silence; hence the common phrase, to communicate a thing sub rosa (under the rose). The symposiarch (master of the feast), either the host himself or some person appointed by him, provided every thing necessary for the banquet. The king of the feast, or the eye, for he was called by both names, superintended the drinking. The distributor gave to each his portion, and the cupbearers (generally beautiful boys) presented the full goblets, which were commonly of splendid workmanship, and decorated with garlands. The wine was drunk mixed with water. The mixing vessel used for this purpose was called the crater, from which the liquor was drawn by a small cup (cyathus), and poured into the goblets (pociule). The luxurious Romans drank out of crystal, amber, and the costly murra (a kind of porcelain introduced by Pompey), out of onyx, beryl, and elegantly wrought gold, set with precious stones. They commonly offered a cup in libation to the Good Genius, one to Jupiter the Deliverer, one to Hygeia, and one to Mercury; or, as others think, the first to Olympian Jupiter, the second to the heroes, and the third to Jupiter the Deliverer or Preserver. Only the moderate ones, however, contented themselves with this number, which was that of the graces; others exceeded the number of the muses, for they drank not only all round (encyclopseis), but to the health of absent friends and mistresses, and then as many cups as the name contained letters; nay, they had regular drinking matches, with prizes for the victor. The following cups represent two drinking cups found at Pompeii:

They were usually made of clay. The primitive drinking vessel was the horn, pierced at the smaller end, from which the liquor flowed. This will be seen in the following cut, which is taken from a picture found in Pompeii, and represents a domestic supper party.

The wine was generally brought in to the guests in earthen vessels, called Amphora—
In a picture found in the room of a wine shop at Pompeii, we have the representation of a wine cart, with a purchaser getting amphorae filled. The wine is contained in a large skin which occupies the whole wagon. The neck of the skin is closed by a ligature, and the wine is drawn off through the leg, which forms a convenient spout. The amphorae were pointed at the bottom, so that they might be stuck into the ground, and kept cool. In this manner they were generally ranged in cellars. The clumsy transverse yoke by which the horses are fastened to the pole is worthy of notice. The upper apartment was called Coenatio or Triclinium. The following cut represents the Triclinium in the garden of the house of Sulist, found at Pompeii. The couches are of masonry, intended to be covered with matresses and rich tapestry; the round table in the centre is of marble:

The banquets varied of course, according to the persons present; for a symposium of young men, and one of philosophers or statesmen, had different kinds of entertainment. Besides the entertainment of conversation, which, as we learn from the Symposia of Plato and Plutarch, was often very serious and philosophic, but more frequently consisted of wit and repartee, together with enigmas, which were much in vogue, they had music and singing; and the sootin (see Seatia) was sometimes in a joyful, sometimes a solemn strain. After the meal was ended, flute-players, female singers, dancers, and buffoons of all kinds amused the guests, or the guests themselves joined in sports and games of various sorts, among which the kottabos is famous. At the close of solemn and splendid feasts, the host distributed presents called apophorta. These were sometimes, for the sake of amusement, thrown into a lottery. See Festivals.

FEATHERS, the peculiar covering of birds, consist of the tube, the shaft, and the barbs. The tube is a hollow, transparent, horny cylinder, constituting the root of the feather; the shaft is elastic, and contains a white, dry, and very light pith. The tube contains a vascular substance, composed of numerous cells, joined together, and communicating with each other. This is enveloped by the tube, but communicates with the skin by a small opening at the root of the tube, and is probably the organ by which the feather is nourished. The sides of the shaft are covered with the barbs, running in a transverse manner; and each barb forms, of itself, a little shaft, which is covered in a similar manner, with little barbs on each edge. On the wing feathers, the barbs are broader on one side than on the other; but on the other feathers, they are equal on both sides. These barbs are provided with barbules, by which they are bound so firmly to each other, as to appear to adhere together, although they are, in fact, entirely separate. The feathers of birds are periodically changed. This is called moultiny. When feathers have reached their full growth, they become dry, and will not allow the tube, or the vascular substance which it contains, continues to absorb moisture or fat. When, therefore, part of a feather is cut off, it does not grow out again; and a bird, whose wings have been clipped, remains in that situation till the next molting season, when the old stumps are shed, and new feathers grow out. If, however, the stumps are pulled out sooner (by which operation the bird suffers nothing), the feathers will be renewed in a few weeks. The inhabitants of the high northern latitudes use the skins of several sorts of water-fowls, with the feathers on, as clothing. The Greenlanders make use of the eider duck, wearing the feathers next to the skin and thus endures the extreme cold of his climate. The ancient Mexicans formed various kinds of pictures, in the manner of Mosaic, from the splendid feathers of the humming bird; but they were necessarily very imperfect. Professor Blank, at Wurtzburg, has invented a similar kind of ornament. Feathers make a considerable article of commerce; particularly those of the ostrich, heron, swan, peacock, goose, &c., for plumes, ornaments, beds, pens, &c. Geese are plucked, in some parts of Great Britain, five times in the year; and, in cold seasons, many of them die by this barbarous custom. Those feathers that are brought from Somersetshire are esteemed the best, and those from Ireland the worst. The best method of curing feathers is to lay them in a room exposed to the sun, and, when dried, to put them in bags, and beat them well with poles, to get off the dirt. Feathers, when chemically analyzed, seem to possess nearly the same properties with hair. The quill is composed chiefly of conglutated albumen, a little trac of that into the yolk.

FEBRUARY; from the Roman goddess Febrina, or Feburina, who presided over the purifications (e.g., for lying in), and is sometimes confounded with Juno. In this month, the Romans held a feast in behalf of the marriage of the deceased; and Macrobius tells us, that in this month, also, sacrifices were performed, and the last offices were paid to the dead. The Mosaic religion also prescribed such purifications.

FECULÁ. See Starch.

FEDERAL GOVERNMENT. Federal is derived from the Latin fœdus, a league, treaty, covenant, and applied to the governments of confederations, which consist of several unit, sovereign states, as, for instance, the Swiss republic, the United States of North America, Mexico, &c. The degree to which such states give up their individual rights as sovereign bodies may be very different. Thus the old German empire was a confederation, under a head, and yet one member of it might wage war with another, while others in a different manner. The United States have given up, among other things, all political power in so far as it relates to foreign affairs. In the Swiss confederation, the different members are allowed to conclude treaties with foreign powers, if they are not expressly prohibited by the constitution. It must be observed that every sovereign state is a federal government, because sometimes a confede-
nition consists merely of a union between a number of states, not stricter than a treaty, defensive and offensive, between two states, as, for instance, the present German Union of Switzerland. See Government.

FEE—FEUD. A fief or feudum properly signifies an inheritable estate in land, held of some superior, or lord; and, in this sense, it is distinguished from alodium, which is the absolute property in land. It is the theory of the English law that all the lands of the kingdom, except the royal domains, are held in fee by a superior or lord, the absolute or alodial property being only in the king, so that all the tenures are strictly feudal. This was a very significant practical doctrine, while the feudal system flourished in Europe in all its vigour; and the remnants of it are still blended, in a greater or less degree, in the land titles, but rather as a theoretical doctrine, from which certain inferences are drawn, than a plain, direct, practical fact; for the property of the proprietor in land held in fee-simple, in England, is as absolute, to all intents and purposes, as where the land titles are alodial, there being no practical or theoretical doctrine of a tenure, or holding, for the owner, in all cases, the property in lands, as well as chattels, is derived through the laws, and is guaranteed by the government; and, universally, the property, in both lands and chattels, reverts to the government, in case of there being no person who can claim it, either as an heir or purchaser; though, in respect to personal property, the government does not always avail itself of the right, but grants the property to persons who find it, in certain cases. But this right to inherit, or succeed to property, in the absence of all other claimants, who have any right, is not what is meant by the theoretical, abstract property, which the king is supposed to have in all the lands of the kingdom, but of which he cannot now avail himself, in respect to a great part of them, to any practical purpose whatever.

The amnest estate is that of a fee-simple; and such an estate can be had only in property that is inheritable, and of a permanent nature; for we speak of a fee-simple in lands and franchises, but never in ships or goods. Though tenements are said to be possessed in fee-simple, yet this is in reference to the land, which includes things attached to it; but if one puts a building upon another's land by his permission, the building is his property, in which he cannot have a fee-simple; but, if he puts it on his own land, he then may have a fee-simple in the land and tenement, considered as one subject. A fee-simple is the estate out of which other lesser estates are said to be carved; as a fee-conditional, such as a fee-tail (see Entails), and a base fee, which is also, in effect, a conditional fee; as, if lands be granted to certain persons, tenants of D., who are to have the lands only as long as they continue to be tenants of D. — this is a base fee. A conveyance to a grantee and his heirs generally, and without qualification, gives a fee-simple; but if the estate be limited to certain heirs only, or limited in time, or have any condition or qualification which may defeat or terminate it, it is something less than a fee-simple.

FEEDER, in canal-building. In order that water may not be wanting in any part of a canal, built on different levels, a supply is insured at the highest level by means of a series of locks through which the water is conveyed from the highest level to the lowest. The streams which furnish the water at this and other points are called feeders.

FEIJEE; an island in the South Pacific ocean, which, as captain Cook was informed, lies three days' sail from Tongataboo, in the direction of N. W. by W. It is described as a high but very fruitful island, abounding with logs, dogs, fowls, and all the kinds of fruit and roots that are found in any of the others, and as being as much larger than Tongataboo, to the dominion of which it is not subject, as the other islands of the Tonga group. The more northerly part of this numerous group reaches north to lat. 15° 33'. Captain Bligh fell in with the easternmost of the Fijee islands in lon. 178° W. The southernmost island lies in lon. 178° E., lat. 19° 50' S. The stature of the Fijeeans is high, theircomplexions are dark, and their hair approaches to wool. They are of a nature, very forcious, and dreaded by their neighbours.

FEELING; one of the five external senses, by which we obtain the ideas of solid, hard, soft, rough, hot, cold, wet, dry, and other tangible qualities. It is the most universal of all the senses. We see and hear with small portions of our bodies, but we feel with all. Nature has bestowed that general sensation wherever there are nerves, and they are everywhere, where there is life. Were it otherwise, the parts divested of it might be destroyed without our knowledge. It seems that, upon this account, nature has provided that this sensation should not require a particular organ. It is the same with the papilla is not absolutely necessary to it. The lips of a fresh wound, the period; and the tendons, when uncovered, are extremely sensible without them. These nervous extremities serve only to the perfection of feeling, and to diversify sensation. Like every other sense, feeling is capable of the greatest improvement: thus we see that persons, born without arms, acquire the nicest feeling in their toes; and, in blind people, this sense becomes so much developed that individuals born blind, and acquiring the faculty of sight in after life, for a long time depend rather on their feeling than on their sight, because they receive clearer ideas through the former sense. A person in this condition, who could not remember the difference of things if he only saw them, as soon as he touched them distinguished them perfectly well. Feeling is the most common of all the senses, as it exists in all creatures which have any sense at all; even some plants show a sensibility to touch. Many animals have no sense but that of feeling.

FEHRBELLIN; a small place in the Middle Mark, in the government of Potsdam, in Prussia, with 1200 inhabitants. It is famous for the victory which Frederic William, the great elector, gained here on June 18, 1753, over the king of Denmark, in his already half conquered country, and made himself master of Pomerania. Considering the consequences, this victory is very important, though there were only about 16,000 men engaged.

FEITH, RHYNIS, one of the first modern poets of Holland, and with Bilderdryk, the restorer of degenerated Dutch poetry, was born at Zwolle, in Over-Yssel, in 1733. He was descended from a family which has produced several members distinguished in the state, or in literature; e. g., Eberhard Feith, author of Antiquities of Hoorn. He early displayed the highest talents for poetry, and, after having studied law at Leyden, resided in his native city, and pursued his favourite studies. He was made burgomaster, and afterwards receiver at the admiralty college, in Zwolle, but did not cease to cultivate the art of poetry, and to enrich Dutch literature by excellent works. Several of his works obtained prizes from the literary academy of Leyden. The poetical society of Leyden awarded him the two first prizes for two poems in memory of admiral Ruyter. Feith, satisfied with the honour, would not receive the medals. The society, therefore, sent him wax impressions of them, in a silver box, on which was represented the hero whom he had celebrated, with the inscription, "Immortal as he."
Afterwards, on a similar occasion, he returned a meed, which had been adjudged to him for his poem Providence, with the request that it might be given to the poet who deserved the second prize. He tried his powers in almost every department of poetry. In his earlier years, he was too much inclined to the pensive and sentimental style of Ouderdom, is free from this fault, but has no definite plan. Among his lyric poems, Oden en Gedichten (Amst. 1796, 3 vols.) are several hymns and odes distinguished for great elevation and feeling. His ode on Ruyter is very celebrated. He also made that naval hero the subject of an epic poem. The best of his tragedies are Thixra, Johanne Gray, and particularly Inez de Castro. In connexion with Bilderdyk, he gave a better form to Haren’s celebrated poem De Genzen, the subject of which is the foundation of Holland. His Letters on Kant’s Philosophy (Brieven aan Sophia over de Kantianasche Wijzegeverite, Amst. 1805) are a feeble effort of his old age. Among his prose works, his Letters on different Subjects of Literature (6 vols. 1784) are distinguished, and contributed much to the dissemination of good taste, by their finish and elegance. In his opinions on criticism.

FELDSPAR, a name in mineralogy, under which has been comprehended a great variety of substances, hitherto believed to form a single species, but which the researches of modern mineralogists prove to constitute several distinct species. The inquiries upon which the proposed distinctions depend, however, being among the nicest in the science, cannot, consistently with the general plan of this work, be noticed here. We shall rather confine our remarks to that portion of the contents of the old species of feldspar, in which, from its wide distribution and known applications, mankind are more generally interested. Its crystals and crystalline masses yield to culture, in all the planes of its prism, which presents, by the reflecting goniometer, in one direction, four angles of 90°; in another, four, alternately of 90° 25' and 120° 35'; in another, four, alternately of 67° 15' and 112° 45' the two cleavages, which are perpendicular to each other, being obtained with the greatest facility, while the third is effected with much difficulty. One of the parallel cleavages is effected with greater ease than the other, indications of which are always apparent in delicate, parallel lines upon the faces produced by the less distinct cleavage. The general figure of the numerous crystals of feldspar is an oblique prism, with succedaneum and acute angulums, of six planes, which vary from four to ten. These prisms are terminated by summits, composed, ordinarily, of two large, culminating faces, and several smaller faces, which seem to obey no constant law of arrangement. Hence it results, that the forms of feldspar are among the most difficult to understand and describe of all the double varieties of the mineral industry. The following may be insinced as the simplest of those ordinarily met with, viz., an oblique prism with four faces (Felispah unitaire, H.); a prism with ten faces, six broad and four narrow, terminated at each extremity by two broad culminating faces (F. quadrilateralis, H.); an isometric rhombic prism (Oblique from the obtuse edge,) having its acute lateral edges truncated and terminated by a single plane at each extremity (F. prismaticus, H.); the same as the last, but terminated at each extremity by summits of five faces, disposed without symmetry (F. sexdeciminton, H.) The lustre of feldspar is vitreous, sometimes inclining to pearly, upon the perfect faces of cleavage; prevailing colour white, including in grey or red; sometimes grey, flesh red, and red, and verdigris green; translucent, and sometimes transparent, and occasionally offers a bluish opalescence in certain directions; hardness below quartz, but not scratched by the knife; specific gravity from 2.53 to 2.60. It is not common to find feldspar in distinct crystals. Its more usual mode of occurrence is in broad, foliated masses, variously disseminated among other minerals. Rarely it occurs in granular concretions; and occasionally, it is quite compact. Before the blowpipe upon charcoal, it becomes glassy, semitransparent, and white, but melts only with difficulty, on its edges, into a semi-transparent vesicular glass. A crystallized specimen, analyzed by Vanquelin, gave silica, 64; alumine, 20; potash, 14; and lime, 2. Feldspar is the most generally diffused, both as to its local and geological situation, of all minerals, with perhaps the exception of quartz. It is an essential constituent of granite and gneiss, and frequently occurs in marble, syenite, hornblende, and trap. It is obtained abundantly in almost all porphyries, in which it sometimes exists in large imbedded crystals. It abounds in primitive and secondary greenstone, the traps and trachytas, forms a large part of lavas, and has even been recognised as an ingredient in many meteoric stones. It is occasionally, though rarely, found in veins, or between two beds, in pyrometamorphic rocks; and though, when occurring along with quartz and mica, in the primitive rocks, it is most generally disseminated, yet it frequently forms concretions separated from those ingredients, assuming the shape of more or less extended, irregular beds. If these be decomposed, by the action of the air, beds of porcelain earth are formed, the most remarkable of which are those in gneiss, at Aue, near Schneeberg, in Saxony, and at Hafnerzell, in the district of Passau. Similar deposits occur near Limoges, in France, and in Cornwall, in England. Localities of it are known in America and in China, where it is called kaolin.

Several varieties of feldspar are used in sculpture and manufacture. They may be classified under the following heads: opalescent variety, from Ceylon and St Gothard commonly called adularia, is much esteemed in jewelry. When cut en cabochon, it reflects, from its interior, a pearly, white light, which floats from one part of its surface to another, according as we vary its position; from which circumstance it is called the moon-stone, or falks-cy sustone. It is often mounted in the centre of a circle of diamonds, whose sparkling reflections contrast in a beautiful manner with the silvery light hovering over the moon-stone. 2. The verdigris-green variety, called the amazon-stone, which comes from near Ekaterinbourg, in Russia, and which has also been found in the Quarrel near Boston, in Massachusetts, is likewise much esteemed by the lapidary.

3. A third variety of this species, employed in jewelry, is the aventurine feldspar, which comes from the island of Cedlovato, near Archangel, and which is of a honey-yellow colour, and every where penetrated by little golden spangles. 4. The pure, covered, and decomposed, or porcelain earth itself, is the most important material in that department of manufactures. See Porcelain. The substances formerly known under the names of siliceous feldspar and albite, and with the former under the present species, were separated, by Mr Brooke, and erected into a distinct
species, under the appellation of Cleavelandite, in honour of Professor Cleaveland, of Bowdoin college. This mineral cleaves parallel to the planes of a doubly oblique prism of 110° 30’, 115°, and 93° 30’. It occurs in thin rhombic tablets, variously replaced upon their lateral edges, and transparent; also massive—the composition is thereby giving to the composition a lamellar appearance. Lustre—hardness and colour similar to feldspar; brittle; specific gravity, from 2.61 to 2.68; composition of a specimen from Chesterfield—silica, 70.6%; alumina, 19.8%; soda, 9.06%; lime, 0.23%; oxide of iron, and manganese, 1.11. For Labrador feldspar, see Labra-
dorite. 

FELL, FIELL, and FIELD, is a Scandinavian word, signifying rock; as, Dorefell, and rocks. 

FELLENBERG, Emanuel von, the celebrated founder of the institution for the improvement of education and agriculture at Hofwyl, in the canton of Berne, in Switzerland, was born in 1771. His father was a man of patrician rank, of the city of Berne, and, in consequence, a member of the government. His mother, a grand-daughter of the celebrated admiral Van Tromp, appears to have been distinguished no less for enlarged benevolence than for sincere piety, and to have imparted an important influence on his character and usefulness. The unshrinking devotedness with which she encountered and sustained considerable personal injury, to snatch her son from a sudden danger at the age of three or four years, left a permanent impression on his mind of the excellence of such conduct. She seized every occasion, which the recollection of history or passing events afforded, to urge upon him the duty of relieving the unfortunate, and called upon him to unite with her to ask the divine aid in executing the resolutions which he formed on this subject at an early age. The details which she often gave of the public services of her grandfather in Holland, in connexion with the memorials presented by his country, which she still retained, awakened a spirit of patriotism; and the ardent feelings she exhibited in his presence in favour of the Americans, during their struggle for independence, excited in him a peculiar interest in that country. He was confirmed in these feelings by the events of the French revolution, and was so engaged that he almost returned from the council-hall, fatigued, and almost disheartened by the failure of efforts to promote salutary measures, and charging him to live for his country. It is to these impressions of his childhood that Fellenberg ascribes, in a great measure, the subsequent devotedness of his life. 

At the age of fifteen, he was placed under the instruction of the celebrated blind poet Fiellet, at Colmar. On his return to Switzerland, an address, delivered by his father, as president of the Helvetic society, on the importance of education, excited in his mind a deep interest on this subject. The intimacy of his father with Pestalozzi, whom he early led to reverence for his genius and benevolence, strengthened this interest, and probably contributed much to give to his efforts the direction they have taken. On his return to his native city, at the age of sixteen, he found the pursuits and character of the young men of his time unsuited to his mind, and abandoned them in conjunction with his study, notwithstanding the petty persecutions to which this conduct subjected him. In order to improve his health, which had been impaired by study, he gave up the delicacies of his father’s table for very simple fare, and employed other means to harden his constitution. He endeavoured to render himself independent of artificial wants, and devoted to benevolent objects the money wasted by his companions in luxury and amusement. He soon begged his father’s permis-
sion to seek a situation more favourable for the pursuit of his studies, and preparation for future useful-
ness to his country. After repeated experiment, he was keenly disappointed at finding no where that elevated view of the subject and the objects of education which he anticipated and desired, as an aid to the moral and mental elevation of the people, that he saw to be the need of some regenerating influence on the mass of society.

At this period, the effects of a pious education were strikingly visible in his preservation from the influence of that spirit of infidelity which then spread like a flood over the face of Europe. His own faith in revelation was confirmed, and he felt a consciousness that no reflecting men could resist the evidence of Christianity, that he spent months of fruitless discussion in the residence of an unbeliever, on the banks of the lake of Zurich, with the persuasion that he should convince him of his error. For ten years subsequent to this period, he made it a leading object to acquaint himself with the state of the people of his country, in order to learn how he could be most useful to it. For this purpose, he occupied a great deal of his time in travelling through Switzerland, usually on foot, with his knapsack on his back, residing in the villages and farm-houses, mingling in the labours and occupations, and partaking of the rude lodging and fare of the peasants and mechanics, and often extending his journey to surrounding countries. In 1790, he went to the university of Tubingen, to complete his studies in civil law, where he still distinguished himself by a spirit of research, and, not satisfied with the public lectures, received private lessons from his professor.

Immediately after the fall of Robespierre, in 1795, he visited Paris. Here he often attended the ses-
sions of the committee of instruction, and had his interest in the subject still further excited by the noble spirit of Grégoire and other philanthropic members of the committee, who seemed like benefactors in the midst of this ocean of tumult and corruption. During his residence in Paris, he perceived the storm which was impending over Switzerland, from the schemes of the French revolutionists, and returned to warn his countrymen against it. He urged the sacrifice of some of the oppressive laws and exclu-
sive privileges, as the only means of averting it. But his predictions were disbelieved, and his warnings disregarded.

At the approach of the French troops, in 1798, to overthrow the government of Switzerland, he was active in raising and leading on the levy en masse, from Lucerne, to resist the invasion.

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His early disappointment in his examination of society, his investigations of the state of the common people, his intercourse with public men, and the tremendous convulsions he had witnessed, had all conspired to impress upon his mind the same conviction—that the only resource for mollifying the state of his own and other countries, and for preventing a repetition of the horrors which he had witnessed, was to be found in early education; and he resolved henceforth to devote himself to this, as the object of his life. He was appointed a member of the council of education of Berne, but was soon convinced that nothing adequate could be accomplished on this subject, through the medium of legislative commissions; and on his own experience, and ample facility, he resolved to devote this to his great object, and to form on his own estate, and on an independent basis, a model institution, in which it should be proved what education could accomplish for the benefit of humanity. He married, about this time, a Bernese lady, of the patrician family of Ischarner, who had borne him nine children, six of whom, as well as their mother, are devoted coadjutors in his plan of benevolence.

In pursuance of his great design, he soon after purchased the estate called Hofwyl, and his life, henceforward, forms an important page in the record of benevolent enterprise. His great object was to elevate all classes of society, by putting them better for their respective stations, and to render them happy and united, without destroying that order which Providence had appointed, and which the governments of Europe preserved with so much jealousy. He believed it important to collect in one institution the poor and the rich, each with their appropriate means of improvement, and thus to establish proper and friendly relations between them. He considered it of high importance to make agriculture the basis of such an institution. He regarded it as the employment best of all adapted to invigorate the body; but he also believed that, by elevating agriculture from a mere handicraft to an art founded upon scientific principles, and leading directly to the operations of the great First Cause, it would become a pursuit peculiarly fitted to elevate and purify the mind, and serve as the basis of improvement to the labouring classes, and to society at large. He selected Hofwyl on account of its situation; so insulated as to secure it from the storms of political events, and surrounded by villages which would furnish labourers, and only six miles from the city of Berne. It was an estate of about two hundred acres, under poor cultivation, lying on a hill filled with springs, and surrounded on three sides by a valley eighty feet in depth. He commenced with employing a large number of labourers in digging drains in every direction, some even to the depth of thirty feet, which completely freed the arable land from water, and, at the same time, were formed into a streamlet round the hill, which served to irrigate its borders and the level below, and convert them into rich meadows. His next plan was to turn up the whole soil to the depth of two or three feet, and then replace it, putting the stones and gravel at the bottom, and reserving the richest portions for the surface. Another object of importance was to convert the swampy ground around into meadows, by covering it a foot in depth with sand and soil from the upland. This was effected in part by means of the stream we have mentioned, which was made to wash down successively by banks of which placed before it, and in part, during the winter, by sled descending and raising each other alternately, by means of pulleys, as is sometimes done in coal beds. In connection with these operations, he erected extensive additions to the granaries (then more than sufficient for the actual produce), to provide for the abundant crops he anticipated.

All this excited ridicule among his enemies, and alarm and remonstrance among his friends; and those of his family who were connected with him, left him, by his advice, to sustain the burden alone. In order to obtain ample supplies of manure, he commenced the system of stall-feeding, with a large number of cattle, which were constantly supplied with fresh grass, instead of being suffered to feed in the pastures; and erected ample reservoirs for solid and liquid manure of every kind, the care of which occupied a part of every day's labour. A system of four years' cropping, with deep ploughing, and the invention of stems of stall-feeding, for breaking up the soil, weeding, and sowing, ensured him success; and the lands of Hofwyl have been made to yield fourfold their former produce, with an uninterrupted succession of crops. The labours of the plough require only half the number of animals formerly used, and the fields of grain produce nineteen fold the amount of the seventh year, of which, as well as their mother, are devoted coadjutors in his plan of benevolence.

The system of agriculture has been fully tested, by repeated visits of distinguished men of science, and the commissioners of various governments of Switzerland and Germany, and its economical results fully ascertained, as exhibiting, in a striking manner, how much larger an amount of manure may be drawn from the land, than was generally supposed. Hofwyl has furnished experimental farmers to a number of princes and noblemen, of various parts of Europe; and its pupils have been employed in the formation and direction of some important agricultural institutions. An establishment for the poor was also formed for the manufacture of his improved instruments of agriculture, which have been sent to every part of Europe. At successive periods, additions have been made to the domain of Hofwyl, increasing it to about 690 acres; which have furnished all the varieties of soil and situation necessary to render the whole a complete experimental and model farm. But Fellenberg occupied himself in improving agriculture only as a means to the more important end of improving man himself; and during the whole period that he was thus actively engaged in this subject, he was not less engaged in organizing the institutions of education, which form the great object of his life, and the chief glory of Hofwyl. Soon after the formation of the institution, he made in his plans, the germ of a scientific institution was formed, by associating two or three pupils with his own sons, and employing private tutors at his own house.

About this time, Pestalozzi was obliged, by the embarrassment of his pecuniary affairs, and the plans of the government of Berne, to leave his residence. On this occasion, Fellenberg was instrumental in bringing him to the chateau of Buchsee, about half a mile from Hofwyl, in the hope of forming, with his co-operation, that republic of education which it was his favourite object to establish. By Pestalozzi's earnest desire, he undertook to advance him funds, and to direct the pecuniary affairs of the establishment for a year. But the strict order and rigid economy, which Fellenberg deemed necessary in a large establishment, ill accorded with the impulses of the good Pestalozzi, whose benevolence was as irregular in its operation as it was ardent in its character. Such a union was not at all adapted to Pestalozzi, soon after was offered the much superior castle of Yverdon, and left the vicinity of Hofwyl with unpleasant feelings towards Fellenberg, inspired by a course of conduct which often restrained what he deemed his best feelings, or arrested him in his noble but wandering flights.
In 1807, the first building was erected for the scientific institution. The number of professors, in a few years gradually increased to twenty, and the pupils to eighty. After selecting and losing two instructors for the projected school for the indigent, he was entreated by a schoolmaster of another canton, inspired with enthusiasm for this object, to employ his son in the execution of this plan. Fellenberg received the young Vehrli into his family, in order to test his character, and, before the end of the year, was induced to place him, with three pupils, gathered from the highways and hedges, in the farm-house of the establishment. Here Vehrli partook of their straw beds and vegetable diet, became their fellow-labourer and companion, as well as their teacher, and thus laid the foundation of the agricultural institution, in 1808.

About the same time, a school of theoretical and practical agriculture, for all classes, provided with professors of the respective sciences connected with it, was formed at Buchsee, at which several hundred students were collected. But experience satisfied Fellenberg that too many contained themselves within the bounds of science, and he thus refused to train young men by an experimental course, in his own improved system of cultivation.

In the same year, he commenced a more important part of his great plan—the formation of a normal school, or seminary of teachers. The first year, forty-two teachers, of the canton of Berne, came together, and received gratuitous instruction in the art of teaching. So great was their zeal, that, on finding the establishment was not large enough to receive them, they were contented to lodge in tents. The following year, twenty-seven were added to this number, from seven other cantons, and a door was opened for regenerating gradually the schools of Switzerland. But the rulers of Berne, without any apparent motive consistent with the spirit of a free government, forbade their teachers to attend these instructions, on pain of losing their stations. Since that period, the seminary for instructors has been connected with the agricultural institution, and none have been received except those who were employed at the same time as labourers.

The establishment had by this time become the resort of strangers from all quarters. The governments of some of the cantons, the general government, the Swiss emigrants and establishments of foreign princes, sent deputations to examine and describe it. The late king of Wurttemberg requested permission from the government of Berne to visit Hofwyli incognito, and, after his departure sent Fellenberg a snuff-box, containing a picture of Columbus breaking the egg. In consequence of these visits, a number of pupils of princely and noble families were sent to the institution for education.

In 1815, a new building was erected, to accommodate the increasing number of the agricultural school, the lower part of which was occupied as a riding-school and gymnasium. In 1818, another building at the expense of the residence of ten professors, and the reception of the friends of the pupils; and, soon after, a large building, now the principal one of the establishment, with its two wings, was erected for the scientific institution, which furnishes every accommodation that could be desired for health or improvement. In 1829, another building was erected in the garden of the establishment for the school of poor girls; and, in 1827, the last building designed for the intermediate or practical institution.

Hofwyli now comprises, 1. the extensive experimental and model farm we have described, some portions under the highest state of cultivation, and others undergoing the process of gradual improvement, which supplies the wants of its population, amounting to about three hundred persons; 2. workshops for the fabrication and improvement of agricultural implements, scientific apparatus, and clothing for agricultural use; 3. a printing press, at which music and other things useful to the establishment are printed; 4. a scientific institution, for the education of the higher classes; 5. a practical institution, for those who are destined to a life of business, or whose circumstances are limited; 6. an agricultural institution, for the education of the labouring classes, with two distinct buildings for boys and girls; 7. a normal school, or seminary for teachers, which forms a part of this institution. At the distance of six miles, is the colony of Meykirch, an interesting branch of the institution, consisting of eight or ten boys, who are placed, much like the new settlers of America, on an uncultivated spot, to acquire their subsistence by their own labour. In this, as in the agricultural institution, the pupils receive from three to five hours' instruction daily, and acquire an education equal to that of our common schools, while they are sustained by a small capital, supplied by Fellenberg, in addition to their own earnings. By a letter from the founder, it appears, that, in Sept. 1829, there were one hundred pupils in the scientific and practical institutions, and one hundred and seventeen in the agricultural institution, under the care of forty educators and instructors. The pupils in the scientific institution and the school for practical instruction, numbered, in the year 1829, 400; of Fellenberg, his lady and children. The agricultural and practical institutions are committed especially to the care of Vehrli, whose faithfulness and ability have been so fully tested.

As a warning to those engaged in similar enterprises, it should be mentioned that the greatest difficulty which was encountered in forming this establishment was in procuring suitable condutors. Many of those who possessed the necessary intellectual qualifications had been educated on a system which Fellenberg deemed radically wrong, and, with honest intentions, rather thwarted than promoted his views. The subsequent attempt to introduce infidel and revolutionary principles. Both classes seriously injured the reputation of the institution, and often became its open enemies, when they found it necessary to leave it.

Within the limits allowed us, it is impossible to give even a sketch of the system of education pursued. Its great aim is to produce men, and not mere scholars. Its leading principle is to unite physical, moral, and intellectual education, and to form all the faculties into one harmonious system, corresponding to the capacities and destination of the individual. Great care is taken to provide for the
invigoration of the body, and the preservation of the health, by the size and airiness of the buildings, by providing extensive play-grounds, garden-spots, and work-shops, and assigning regular hours for exercise; by frequent cold bathing, in baths erected for the purpose; and by the careful regulation of food and sleep, according to the necessities of individuals, under the direction of the physician of the establishment. A large number of professors, in every branch, is employed, to meet the Intellectual wants of the pupils, and to provide for the separate instruction of those whose capacity or previous education might at any time prevent their entering regular classes. All the best methods of instruction are employed, according to the direction of the physician of the establishment, and parental care of the children of Fellenberg and a chosen set of condutors, formed in the establishment, who exercise the office of educators, and attend the pupils, as friends and monitors, in their studies, their chambers, and their amusements. The development of religious feeling under the influence of revelation, aided by the cultivation of the taste, and the formation of habits of constant industry, order, and temperance, is the means on which they rely for success. The stimulus of rewards and distinctions is never employed; and complete proof is furnished in this establishment, that the most ardent thirst for knowledge and the most assiduous habits of study may be produced without resorting to the principle of emulation. In abandoning the use of this powerful stimulus, no rigor or severity has been found necessary. The most mild and paternal system of government has been sufficient to reclaim the numerous outcasts who have been received into the agricultural institution. Only two cases occurred in which expulsion was necessary, in fourteen years; and severe punishment is not requisite in more than two or three instances in a year. It would only mislead the reader, to attempt to describe, in an article so limited, the admirable combinations of means by which the points in the plan of education mentioned are brought into practical operation. Another great point has been fully established by the experiments of Fellenberg—that the poor may receive a good practical education at such an institution, without interfering with the usual hours of labour; and that, if they can be retained to the age of twenty-one, the expense will be entirely repaid.

We believe no institution exists in Europe, which combines the same variety of objects as Hofwyl. It has given birth, however, to a number of agricultural schools in Switzerland and Germany, directed by its pupils, which are affording similar blessings to the poor. The celebrated colony for the reception of paupers, at Frederics Oord, in Holland (see Colonies, Pauper), is also under the direction of a person educated at Hofwyl.

FELLOE; the circular wooden rim, which, with the addition of a nave and spokes, make the wheel of an engine.

FELLOWSHIP; the name of a rule in arithmetic, useful in balancing accounts between traders, merchants, &c.; as also in the division of common land, prize-money, and other cases of a similar kind. Fellowship is of two kinds, single and double; for two, without time, and fellowship with time. Single Fellowship is only in all the money have been employed for the same time; and therefore the shares are directly as the stock of each partner. The rule in this case is as follows:—As the whole stock: the whole gain or loss: each man's particular stock: his particular share of the gain or loss.

Example. A bankrupt is indebted to A £1000, to B £2000, to C £3000; whereas his whole effects sold but for £1200: required each man's share. Here the whole debt is £6000; therefore,

\[ \frac{1000}{1200} : \frac{2000}{1200} : \frac{3000}{1200} \]

As 6000: 1300 :: 2000: £400, B's share.

\{ 3000 : £600, C's share. \}

Double Fellowship is when equal or different stocks are employed for different periods of time. The rule in this case is as follows:—Multiply each person's stock by the number of months it engaged; then take the sum of the products: the whole gain or loss: each particular product: the corresponding share of the gain or loss.

Example. A had in trade £50 for four months, and B £600 for five months, with which they gained £234: required each person's particular share.

\[ 50 \times 4 = 200 \]

\[ 60 \times 5 = 300 \]

\[ 500 : 24 : 200 : £9 12s. A's gain. \]

\[ 300 : £14 8s. B's gain. \]

See Bonycastle's Arithmetick, and most other authors on this subject.

PELO DE SE (a felon of himself), in law; a person that, being of sound mind, and of the age of discretion, deliberately causes his own death. The laws have considered voluntary suicide a crime, and, as they could not reach the criminal himself to punish him, have inflicted a punishment on his friends and relatives, by ordering that his body should have an ignominious burial. But, as no person of unsound mind is supposed to be capable of committing a crime, provision was made for a trial by a coroner's inquest, or jury, which, being summoned for the purpose, pronounced whether the deceased killed himself, and also decided whether he was of sound mind, and capable of being a folio de se, within the meaning of the law. But, as the punishment in this case was strongly repugnant to the feelings of humanity, and the jurors were more disposed to compassionise the relatives of a man who had committed such an act of desperation, than to inflict an additional misfortune upon them, most great punishment have uniformly, gave a verdict of insanity, so that it had become a very general sentiment, that the act of deliberate suicide was itself proof of an unsound mind. Another reason for this proceeding was, that, by the laws of England, a folio de se forfeited all his personal property to the king—another punishment on his survivors, which the jurors would very naturally be led, by the same sentiments of humanity, to avert. The law was, accordingly, for the most part, inoperable, as well as inhuman and unjust, and legislators have recently begun to expunge it from the modern codes.

PELONY, in law, includes generally all capital crimes below treason. It is a word of feudal origin, and is supposed by Spelman to have been derived from the Teutonic words fee and tus (price), and meaning the price of the fee, and, accordingly, was applied to those crimes which were punished by forfeiture of lands; so that the crime was understood in the common expression, be as much as a man's fee was worth. The term is now applied to some acts for which capital punishment is not inflicted; as suicide is called a feony, and the self-murderer a felon, though it is an offence for which, from the nature of the case, the felon himself could never be punished. The term is generally used, however, to signify crimes which are punishable with death.
FELS—FELTRE.

FELS, and FELSEN; a German word occurring in many geographical names, and signifying rock; as Drachenfels, Dragon-rock.

FELSE; a Hungarian word, meaning superior, situated here and there; it is the opposite of Atso, situated lower. It occurs in geographical names.

FELSPAR. See Feldspar.

FELTHAM, Owen; an English author, born about the middle of the seventeenth century, descended of a respectable family in Suffolk. Little more is known of him than that he resided many years in the family of the Stuarts, during which time he published a work of great merit, entitled resolves, Divine, Political, and Moral. This book went through twelve editions before the year 1709. A thirtieth has lately appeared. His death is supposed to have taken place about the year 1678.

FELTING. The texture of modern hats, which are made of fur and wool, depends upon the process of felting, which is similar to that of fulling (q. v.). The fibres of these substances are rough in one direction only, as may be perceived by passing a hair through the fingers in opposite directions. This roughness, if left, would give the hat an uneven appearance; and, so that when the mass is agitated, the anterior extremities slide forward in advance of the body, or posterior half of the hair, and serve to entangle and contract the whole mass together. The materials commonly used for hat-making are the fur of the beaver, seal, rabbit, and other animals, and the wool of sheep. The furs of most animals are mixed with a longer kind of thin hair, which is obliged to be first pulled out, after which the fur is cut off with a knife. The materials to be felted are intimately mixed together by the operation of bowing, which depends on the vibrations of an elastic string; the rapid alternations of its motion being peculiarly well adapted to remove all irregular knots and adhesions among the fibres, and to dispose them in a very light and uniform arrangement. This texture, when pressed under cloths and leather, readily unites into a mass of some firmness. This mass is dipped into a liquor containing a little sulphuric acid; and, when intended to form a hat, it is first moulded into a large conical figure, and this is afterwards reduced in its dimensions by working it for several hours with the hands. It is then formed into a flat surface, with several concentric folds, which are still further compacted in order to make the brim, and the circular part of the hat. The felt is then dried, and serves as a mould for the cylindrical part. The nap, or outer portion of the fur, is raised with a fine wire brush, and the hat is subsequently dyed, and stiffened on the inside with glue. An attempt has been made, and at one time excited considerable expectation in England, to form woollen cloths by the process of felting, without spinning or weaving. Perfect imitations of various cloths were produced, but they were found deficient in the firmness and durability which belongs to woven fabrics.

FELTRE (Feltria); a town of the Lombardo-Venetian kingdom, in the province of Belluno, about sixteen leagues from Venice; lat. 49° 0' 43" N.; lon. 11° 55' 24" E. There are some manufacturies here of silk and leather. Feltre is the seat of a bishop; it contains 4530 inhabitants. In 1809, Napoleon gave the title duke of Feltre to General Clarke. See the Appendix.

FELTRE (Henry James William Clarke), duke of, of Irish extraction, was born at Landrecies, October 17, 1705. His father was a keeper of the public stores at Landrecies. In 1781, he entered the military school at Paris. In 1790, he went to London with the French embassy, and afterwards served in the infantry and cavalry, until he was suspended and imprisoned as a noble. At a later period, he was appointed chief of the topographical office, by Carnot, then a member of the committee of public safety, and the head of all military affairs. His services in this office were valuable, and he was made a general of the directory, in 1795, created him general of division. Bonaparte having at this time excited the jealousy of the directory, by his success in Italy, and his great popularity, Clarke was sent to watch the young general; but Bonaparte soon perceived the purpose of his mission, succeeded over Clarke entirely on his interests, and employed him as his secretary in the negotiations of Campo Formio. The eighteenth of Fructidor having obliged Carnot to leave France, Clarke was recalled to Paris, whither, however, he did not immediately repair. His double dealing had now become known, and rendered him obnoxious to the army. He assisted in the revolution of the eighteenth of Brumaire (q. v.), and became now closely connected with Bonaparte. In 1803, he was commandant extraordinary of Lunéville, during the sessions of the congress at that place. After passing three years as charge d'affaires at the court of the emperor, during which a considerable system had been created king of Etruria, he was appointed counsellor of state, and secretary of the imperial cabinet for the marine, and for war. In 1805, Napoleon made him governor of Vienna, and grand officer of the Legion of Honour. He was employed, after the peace of Presburg, in several important diplomatic negotiations between Russia and England, and, after the battle of Jena, was appointed governor of Berlin. In 1807, he was made minister of war. Shortly after, he was created duke of Feltre, with a very large dotation. (See observations.) He had previously been made count of Huneburg. Elated by his elevation, he is said to have claimed descent from the Plantagenets. Napoleon, amused by his pretensions, said to him, jestingly, before a crowd of spectators, Vous ne m'avez jamais parlé de votre origine doublément royale, ni de vos droits au trône d'Angleterre; il faut les revendiquer. The most absolute devotion to the wishes of Napoleon in the administration of his department, and a professed hatred of England, characterized the duke at this time. He has been accused of rendering the imperial government obnoxious by his conduct, and of contributing much to hurry Napoleon into the war against Spain. His words respecting this subject, as late as in 1809, are remarkable. On the breach with Spain, in 1809, he wrote in the Bulletin, that the absence of Napoleon, Clarke lost his presence of mind, and did not recover it till the danger was over, when he ordered the arrest of general Lamothe. At the time of the levy of the guards of honour, he issued secret orders to the prefects, representing the nobles as objects of suspicion, and designating their children as hostages. At this moment, when his measures were creating numerous enemies against the imperial government, the duke of Provigo (Savary), then minister of police, warned Napoleon to beware of Feltre, and accused him of being leagued with those senators who had made overtures at London; but the emperor, unfortunately for himself, would not believe Clarke capable of such ingratitude. During the siege of Paris, everything in Feltre's department was left undone. The most important points were left defenceless, and all precautions were neglected. To disguise his perversity, Clarke for a time resided at Blois, and then proposed to declare the senate and provisory government hors de la loi; a few days later, he was found among those whom he had just proscribed. So important were his services to the Bourbons, that he would have been left in the office of minister of war, had it not been impossible, as Louis XVIII. expressed himself, de le prendre tout
The information he communicated to the new government was valuable, and the duke soon became a peer of France. It was then that he pronounced from the tribune the bar-
barous maxim of the old monarchy—"si veut le roi, si veut la loi." On the landing of Napoleon from Elba, the
ministry of war was wisely obtained from the duke of
Feltre, and the new minister repaired to the chamber of
deputies, where he asserted, that, "arrived at the age
of fifty, he had never betrayed any person." He
then went to England, and afterwards to Ghent. 
While here, the duchess of Feltre is said to have ob-
tained her husband's pardon from Napoleon. But
Waterloo changed the fate of France, and Feltre pub-
lished a proclamation, in which are the expressions,
"Bonaparte et sa séquelle, nîlas esclave du tyran.
"The author of such a paper was not thought, even by the
ministers of the foreign powers, a proper member of
the council. He was, however, reappointed minister;
and in this post he presided the most experienced
officers of the army, and, in order to procure himself
support, he bestowed large sums on his creatures un-
der the name of arrears. He classified all the of-
cers, in regard to the degree of suspicion attached to
them—he who had been publicly a parasite of Napo-
leon.—He died October 26, 1818.

FELUCCA. A vessel, with oars, common in the Mediterra-
nean. See Boat.

FEME. The Femgerichte (Fem-courts) were crim-
inal courts of Germany in the middle ages, which
took the place of the regular administration of jus-
tice (then fallen into decay), especially in criminal
cases. These courts originated, and had their chief
jurisdiction in Westphalia, and their proceedings
were conducted with the most profound secrecy;
they were called Westphalian, or secret tri-
bnals. The word fem is probably derived from
the Old Saxon verfemen, which means to excommuni-
cate or curse. Femgericht, therefore, is a tribunal which
has power to subject the offender to banishment or
outray. These courts derive their origin from
Charlemagne; but no explicit account of them occurs
earlier than the thirteenth century. The total want
of the means of procuring justice in a regular way
enabled them to obtain, especially after the fall of
Henry the Lion (1182), organization and extensive au-
nomony. The organization of these courts was
the archbishop of Cologne received Enger and West-
phalia, under the name of a duchy. It may have
been at that time, that, in consequence of the total
and ruinous disorder in the administration of justice,
these secret, or, as they styled themselves, free tri-
bnals, came into active operation, in the place of
the courts which had hitherto been held by the bishops
or royal commissaries (missis regii). Amidst the
general distractions which were then prevalent in Ger-
many, it was not difficult for them to acquire a tre-
 mendous authority, while they might, at the same
time, produce some beneficial results; and the em-
peror, to thwart the increasing power of this authority, by avail-
ing themselves, at times, of the Femgerichte, to pro-
mote their own designs, and to intimidate, by their
means, powerful nobles. In process of time, how-
ever, they degenerated, and no longer confined them-
selves to law and precedent, so that the secrecy in
which they enveloped themselves, only served as a
cloak for the Jacobins to secret a number of their members, which were dispersed every-
where made it easy for them to extend their influence
through all Germany. In any German state, the man
who had a complaint against his neighbour, which
could not be sustained before the ordinary judges,
beneath the jurisdiction of the Westphalian tribunal.
These secret tribunals were most terrible in the fourteenth
and fifteenth centuries. It is therefore by no means
surprising that so many voices were raised against
them, and that, in 1401, various princes and cities of
Germany, as well as the Swiss confederates, united
in a league, to enable all persons to obtain justice
by their means, and to prevent any from seeking it
from the secret tribunals. Particular estates like-
wise, after some summons, the ancient Femgericht
was not entirely destroyed, until the public peace (Lauf-
liefriede) was established in Germany, and an amended
form of trial and penal judicature was introduced.
The last Femgericht was held at Zell, in the year
1598. Beyond the limits of Westphalia, there were
Femgerichte in Lower Saxony and other German
states; but they had an authority far less extensive,
and their jurisdiction was confined to a limited
circle.

In consequence of the secrecy in which these
tribunals were enveloped, little is known of their in-
ternal organization. The chief officer, who was
generally a prince or count, had the supreme direc-
tion of the tribunal, and the jurisdiction of which
was not restricted to the province in which the free
tribunal existed. The president of the secret
tribunal was called the Freigrat (free count; for in
early times those who administered justice in the
provinces in the king's name were denominated\ncounts). His associates, who concurred in and ex-
cuted the sentence, were called Freischaffern, their
sessions Freitage, and their place of meeting, Frei-
stuhl (free bench or court). The Freischaffern, who
were appointed by the counts, were scattered through
all the provinces and cities of Germany. It is com-
puted that their number amounted to 100,000.
They recognised one another by certain signs and
watch words, which were concealed from the unin-
initiated; and they were hence called the Wusse-
nden or illuminati. They bound themselves by a tremen-
dous oath; for they vowed "to support the holy
Ferne, and to conceal it from wife and child, father
and mother, sister and brother, fire and wind, from
all that the sun shines on, the rain moistens, from
all that is under the earth, as well as from the
knowledge of the emperor, and to show him
against the emperor, and for this reason generally made him one of their number
at his coronation at Aix-la-Chapelle. Admission,
according to the strict rules, could take place only in
the Red land, that is, in Westphalia. The assem-
bles of the tribunal were open or secret. The for-
mer were held by day, in the open air; the latter
by night, in a forest, or in concealed and subterranean
places. In these different cases, the circumstances
of judgment and the process of trial were different.
The crimes of which the secret tribunal usurped
cognizance were heresy, sorcery, rape, theft, robbery,
and murder, and all other acts of injustice, as the
Freischaffern, who, without further proof, de-
clared upon oath, that the accused had committed the
crime. The accused was now thrice summoned to
appear before the secret tribunal, and the citation
was secretly affixed to the door of his dwelling, or
some neighbouring place; the accused remained un-
known to the public, and the accused was made by one
day, and, when they do not appear, he was once more cited in a solemn ses-
ion of the court, which was called the secret Acht,
and, when, and, if still continuations, was given over to
the Freischaffern. The first Freischaffer who met him,
fastened him, not to a gibbet, but to a tree, to indi-
cate that he was put to death. After many resistances, it was lawful
to destroy him outright. They then left their knife.
FENELOX, FRANCOIS DE SALIGNAC DE LA MOTTÉ; one of the most venerable of the French clergy, the pattern of virtue in the midst of a corrupt court. He was born in 1651, at the château Fénélon, in Perigord, of a family illustrious in church and state. A gentle disposition, united with great vivacity of mind, and a free and delicate constitution, characterized his youth. His uncle, the marquis of Fénélon, had him educated under his own eye, at Cahors. The youth made astonishing progress, and easily mastered the most difficult studies. In his 15th year, he preached with great applause. His uncle, fearing that success and flattery might corrupt an amiable heart, advised his nephew to cultivate his talents in retirement. He placed him under the care of the abbé Tronson, superior of St Sulpice, in Paris. At the age of twenty-four, Fénélon took holy orders, and performed the fatiguing duties of the parish subject to St Sulpice. He returned to Paris, gave him the care of a society of female converts, called the New Catholics, which office he discharged during three years. In this station he first displayed his powers of instruction and persuasion. The king, having heard of the success of his labours, appointed him to take charge of a mission to Saintonge, for the conversion of the Huguenots, where his mild and convincing eloquence, joined to his amiable manners, met with astonishing success. It is to the honour of Fénélon, that he would not accept this post, except on condition that no other means should be employed against them than those of charity and argument. His uncle conferred on him the priory of Carennac. Soon after, he wrote his first work, On the Education of Daughters, which was the basis of his future reputation. In 1689, Louis XIV. intrusted to him the education of his grandsons, the dukes of Burgundy, Anjou, and Berry. Fénélon was successful in forming the mind of the young duke of Burgundy, heir presumptive to the throne of France, and sowed the seeds of every princely virtue in his heart; but his premature death blasted the pleasing anticipations entertained respecting him. In 1694, Fénélon was created archbishop of Cambrai. A theological dispute (see Quisition) with Bossuet, his former instructor, terminated in his condemnation by pope Innocent XII., and his banishment to his diocese by Louis XIV. Fénélon submitted without the least hesitation. In this period (1694—97) was written his letter to Louis XIV., first discovered in 1826, in which he speaks of the truths to the deceived monarch. (Lettre de Fénélon à Louis XIV, avec Fauconnet, Renouard, Paris, 1825). From this time, he lived in his diocese, sustaining the venerable character of a Christian philosopher, and scrupulously performing his sacred duties. He died 1715, of a lung fever. His works are of the highest importance to theology, and the belles-lettres, have immortalized his name. He was familiar with the best models of ancient and modern times, and his mind was animated by a mild and gentle spirit of benevolence. His style is fluent and pleasing, pure and harmonious. His most celebrated work is Les Aventures de Télémaque, in which he endeavored to exhibit a model for the education of a prince. It was carried off and published by a valet employed to transcribe the manuscript. On the appearance of this work, Louis manifestly displeasure towards Fénélon, conceiving this historical romance to be a satire on his reign, and forbade the completion of the printing. Some malicious persons pretended, what Fénélon himself never thought of, that Calypso represented madame de Montespan, Eucharis mademoiselle Fontanges, Antiope the duchess of Burgundy, Proteslas Louisvois, Iliomanteus the duchess of Bourbon-Jaunay, and Telemaque, in 1714. It is a masterpiece of its kind, delivering the most excellent morality in pleasing language. Two years after his death, his heirs published the Télémaque, complete in two volumes. Since that time, there have been numerous editions. In 1819, a monument was erected, by public subscription, to his
memory; and the seventh of January, 1826, his statue, executed by the sculptor David, was placed at Cambrai. Baussot wrote 'The Life of Fénicul, from original papers; and Champaubert-Figue has published a collection of his letters, never before printed. The Œuvres choisies de Fénicul, with his eulogy by La Harpe, and a biographical and critical notice by M. Villemain, appeared at Paris, 1825, in 6 vols.

FÉNUL (anethum farniciun); a tall plant of the natural order umbellifere, bearing umbels of small yellow flowers, and finely divided leaves. By cultivation, the seeds lose their acrid properties, and acquire an agreeable flavour; they are carminative, and are frequently employed in medicine. In Italy, the young sprouts are eaten as a salad, and also in soups. The A. graveolens has a strong and less agreeable odour, and does not, ordinarily, exceed eighteen inches in height. Fennel seed is extensively exported from France to Great Britain, and is said to be employed in the manufacture of gin.

FENTON, ELIZA; an English author and poet of considerable talent, as well as learning, was born in 1658. Her father was a prosperous merchant. He was of an ancient and respectable family, but the youngest of twelve children. After going through the usual course of education at Jesus college, Cambridge, he took his bachelor's degree with the intention of entering the church. This design was, however, rendered abortive by his political principles, and he accepted an engagement in the capacity of usher. The Earl of Orrery afterwards, through the recommendation of his friends, was induced to make him his private secretary, and to place his eldest son under his care. In this situation he became acquainted with most of the wits of the age; and Pope, whom he assisted in his Odyssey (translate the whole of the first, fourth, nineteenth, and twentieth books of that poem), in particular, was much attached to him. Pope's interest was exerted in his favour, both with Craggs, the secretary, and after his death, with lady Trumbull, to whose son he was appointed tutor. Besides the translations alluded to, he published, in 1709, Oxford and Cambridge Verses; a volume of poems, 1717; Mariamne, a tragedy, 1758; and the Lives of Milton and Waller, with an edition of the poems of the latter. His death took place, July 13th, 1730. As a poet, Fenton displayed much harmony and poetic diction, and, as a translator, considerable sweetness of manner. His translation of Marriamne also maintains a respectable rank among similar dramatic productions.

FEOD, or FEUD. See Feudal System.

FEODOSIA; a city of European Russia. See Caffa.

FERDINAND; German emperors.

1. Ferdinand I., brother of Charles V., whom he succeeded as emperor of Germany, 1558, having been chosen king of the Romans, 1531, and king of Hungary and Bohemia, 1526. In 1559, he held a diet at Augsburg, in which the currency of the empire was regulated, and many religious grievances suffered by the Protestants were exposed to the view of the council. He was a mild character, and, at the second session of the council of Trent, in 1562, he obtained several religious privileges for his subjects. The aulic council (q. v.) was definitively organized during his reign. He ascended the throne too late to effect as much good as his predecessor had done.

2. Ferdinand II. succeeded his uncle Matthias, who died without children, and who had secured to him the succession in an assembly of the states, in 1617. He ascended the imperial throne when the thirty years' war (q. v.) was just on the point of breaking out, and the House of Austria was in a critical situation. He was of a dark and reserved character, had been educated by the Jesuits at Ingolstadt, and, in his religious views, was very unlike his ancestors, Ferdinand I., Maximilian, or even Rodolph and Matthias. His zeal was directed against every deviation from the decrees of the Councils, and he obstinately adhered to bigoted and narrow views of religion. The retreat of the Bohemian forces, which had appeared before Vienna, under the command of Thurn, gave him an opportunity of securing his election to the imperial throne, in spite of the opposition of the Union and the Bohemians (1610) by the support of the league, and of the elector of Saxony, John George I., placed him firmly on the throne of Bohemia, where he relentlessly persecuted the Protestants, banishing their preachers, and compelling many thousand industrious people to remove to foreign countries. He recalled the Jesuits, and tore the charter of privileges, granted by Rodolph II., with his own hand. (See Calisilies.) He declared his rival, Frederic V., under the ban of the empire, and in spite of the opposition of the elector of Saxony, transferred the Palatinate to the duke of Bavaria, who supported him in his measures to check the spread of the fiery religion. He left his eldest son, Christian IV., king of Denmark, Christian, duke of Brunswick, and count Mansfeld. The two dukes of Mecklenburg, who had taken part with Denmark, were put under the ban of the empire. Wallenstein was invested with the duchy of Mecklenburg. He also attempted to make himself master of the commerce of the Baltic; but this project failed. The siege of Stralsund being rendered ineffectual by the protection of the Hanse towns. He now published the edict of restitution (1629), restoring all the ecclesiastical foundations which had been abolished by the Protestants, contrary to the ecclesiastical reservation (see Religious Peace), to the Catholic bishops and prelates, declaring the Calvinists to be excluded from the religious peace, and requiring the Protestant subjects of Catholic princes to embrace the Catholic religion. This edict was carried into execution, by force of arms, at Augsburg, Ulm, Kaufhuren and Ratisbon. But the dismission of Wallenstein, which was almost unanimously demanded by the diet, and the efforts of Richelieu, who put all his political machinery in motion, in order to secure to France a powerful influence in Europe, and to limit the almost overwhelming power of the house of Austria, and, finally, the power of Gustavus Adolphus, supported the Protestants. His project failed; the Protestant princes, when they found all hopes of reconciliation destroyed by the siege of Magdeburg,—all contributed to prevent Ferdinand from carrying his plan into execution. The death of Gustavus Adolphus, the victory of his own son, the archduke Ferdinand, over Bernard, duke of Wiemar, at Nordlingen, and the separate peace with Saxony (Prague, 1632), gave him the prospect of an ultimate triumph over the Protestants. But the treatment of the elector of Treves, who, having placed himself under the protection of France, and received French troops into his fortresses, was carried off to France by the Spanish, and by the command of Ferdinand and Philip IV., and the murder of the French garrison, gave France a pretext for an immediate war with Spain and Austria. Sweden could now act with renewed vigour. Baner (q. v.) defeated the imperial and Saxony forces at Wittenrock, 1636, and drove them out of the province of Livonia. The Feb. 15, 1637, without having accomplished his design of destroying Protestantism and political freedom in Germany.

3. His son, Ferdinand III., the victor of Nordlingen, succeeded him. He was more disposed towards peace than his father. Baner, aided by Wallenstein, defeated the imperial troops. Still, however, the diet, assembled at Ratisbon in
1640, did not agree to a peace. Although Ferdinand would not render himself subservient to the interests of Spain and the Jesuits, and though he showed much spirit in his diet, the war was accomplishing his objects. At last, the preliminaries of Hamburg were concluded (1641), by the articles of which a general congress was assembled at Munster and Osnabruck, for the purpose of negotiating a peace. A long time elapsed before this congress commenced its session. In June by the impassioned desire of Naples to truce, the war continued with various success. In 1648, when the Swedes (who, under Torstenson, had even threatened Vienna) were on the point of taking possession of the capital of Bohemia, under Wrangel, Ferdinand succeeded to ascended to the peace. (See Westphalia, peace of.) He soon after secured the election of his son, Ferdinand IV., as king of the Romans; but that prince died the next year. In the diet of 1652—54, some important changes were made in the administration of justice. Shortly before his death (1657), Ferdinand concluded a league with the Porte.

FERDINAND V., king of Aragon, who received from the pope the title of the Catholic, on account of the expulsion of the Moors from Spain, was the son of king John II., and was born in 1453. By his marriage with Isabella, queen of Castile, he laid the foundations of the Bourbons, or Spanish kings, which was finally completed forty-two years later. "Ferdinand and Isabella lived together," says a historian, "not like a couple whose united possessions were under the control of the husband, but like two monarchs, closely and voluntarily united by a community of interests." Isabella allowed her husband no other share in the government of Castile than the privilege of affixing his signature to the decrees, and of uniting his arms with her own. With Ximenes (q. v.) they raised Spain to an eminence which she had never before attained. After a bloody war of ten years, they conquered Grenada (1491), the only kingdom of which the Moors yet retained possession in Spain; but the most brilliant event of their reign was the discovery of America, for which Isabella had furnished the ships, and which made them sovereigns of a new world. (See Columbus.) This politic prince laid the foundation of the Spanish ascendancy by the expulsion of the Moors (1500), by means of his general, Gonzalvo de Cordova, and by the conquest of Navarre (1512); but his policy was deceitful and despotical. These stains obscure the great qualities which made him the first monarch of his time. His efforts to aggravize himself, and confirm his power, and his religious bigotry, led him into great errors. For the purpose of diminishing over the consciences of his subjects, he instituted the court of the inquisition, in 1480, not perceiving that he thus gave the clergy a power which they would soon use against the monarch himself. Not less unjust and impolitic was the expulsion of the Jews (1492) and the banishment of the Moors (1501). After the death of his wife Isabella (1504), he married Germaine de Foix, and died (1516) of the dropsy, produced by an aperitif, given by his second wife, Charles I. (V.) succeeded him.

FERDINAND I. (at an earlier period, IV.) of Bourbon, infant of Spain, king of the Two Sicilies, born, Jan. 12, 1751, was the third son of Charles III., king of Spain, whom he succeeded, in 1759, on the throne of Naples, on the accession of the latter to that of Spain. Ferdinand IV. took the reins of government in France, by the revolution of 1790, 1792; but the administration had hitherto been conducted by a council of regency, established by his father, under the presidency of the celebrated marquis Tanucci, previously professor of law at Pisa. His education, and that of his elder brother, Charles IV. of Spain, had been conducted by prince Santo Nicandro, a man of honest intentions, but of limited views. Ferdinand showed strong inclinations towards the people, and was often invited to the court. In one of his visits, he was asked if he could not be induced, by the important events of the age, to give up hunting, fishing, and similar pleasures, so commonly the occupation of those to whom they should be the least familiar. While a child, Ferdinand showed strong inclinations towards the people, often invited to the court. In one of his visits, he was asked if he could not be induced, by the important events of the age, to give up hunting, fishing, and similar pleasures, so commonly the occupation of those to whom they should be the least familiar. While a child, Ferdinand showed strong inclinations towards the people, often invited to the court. In one of his visits, he was asked if he could not be induced, by the important events of the age, to give up hunting, fishing, and similar pleasures, so commonly the occupation of those to whom they should be the least familiar. While a child, Ferdinand showed strong inclinations towards the people, often invited to the court. 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the same powers, in 1805, Ferdinand was also obliged to promise not to permit the landing of the troops of the belligerent powers in Naples. In November, 1805, an Anglo-Russian fleet appeared before Naples, and 12,000 Russian troops landed in Naples, and a portion of the French troops into the Neapolitan territory, to punish the king for this breach of the treaty. Ferdinand again fled to Sicily, in 1806, where he maintained himself by the assistance of the British; but the queen becoming dissatisfied with the latter, Ferdinand, who had always regarded them merely nominally, placed the administration in the hands of his son Francis. The imbecility of the king, whose chief occupation was hunting wild boars, and distributing the best pieces among his favourites, in a formal way, the wretched state of the numerous nobility, and the deplorable situation of the court, appear from all the documents of that time relating to Sicily. See, for instance, lord Collingwood's (q. v.) Life, and Hackert's Biographical Sketch, published by Goethe (Tubingen, 1811).

Hackert was painter to his Sicilian majesty. Queen Caroline was obliged to leave Sicily in December, 1811, and went, by way of Constantinople, to Vienna, in order to settle the affairs of which Ferdinand was jealous. On Sept. 1814, the British then prevailed upon the king to take the reins of government again into his own hands. The congress of Vienna finally re-established Ferdinand IV. in all his rights as king of the Two Sicilies, in 1814. (See Murat, and Joseph Bonaparte.) The royal family once more entered Naples, June 17, 1815, and Ferdinand, Dec. 12, 1816, united all his possessions "on this side the Faro" (q. v.) and "on the other side the Faro" into the kingdom of the Two Sicilies, and assumed the title of Ferdinand I. Nov. 27, 1814, Ferdinand married the widowed princess of Pariana, since 1815 duchess of Florida. Feb. 16, 1818, he concluded a concordate with the pope, by which the long disputes between Naples and Rome were finally settled. After the Austrian troops, who had re-established him, had left Naples, the Austrian general Nugent remained as commander-in-chief of the army. He abolished the French organization of the troops, by which he regulated merely nominally, the discipline of the troops, and all the good regulations which Joseph and Murat had established for the promotion of agriculture, education, the civilization of the lazaroni, &c., were abolished. In the peace with Algiers, concluded under the mediation of Britain, Ferdinand obliged himself to pay 25,000 plasters annually. Medici (q. v.) was then the soul of his administration. In 1820, Ferdinand was obliged to swear to support the constitution, modelled after the Spanish. (See Naples, Revolution of; and Sicilies, the Two.) The Austrian arms, however, enabled him to disregard his oath and solemn promises. They re-established him (after he had been obliged again to leave Naples) in the possession of absolute power, in 1821. He died, Jan. 4, 1825, and was succeeded by his son, Francis I. The duchess of Florida died at Naples, April 25, 1826. Though we have seen Ferdinand three times obliged to leave his capital, and, throughout his whole life, supported entirely by foreigners, yet the inscription on his statue in the study, in Naples, calls him the most inviolate. As to Ferdinand's personal character, all agree that he was good-natured. For the sufferings of his subjects he felt strong sympathy. He established several charitable institutions; among others, the colony of St Lecio (1775), of which he wrote a description. He also permitted the abbot lenaron translated it into French, under the title Origine de la Population de S. Lecio et ses Progrès, avec les Lois pour en bonne Police, par Ferdinand IV.

FERDINAND III., JOSEPH JOHN BAPTIST, bro-
to the Poles, in June, 1812, as their future king. The peace of Paris (May 30, 1814) restored him to the grand duchy of Tuscany, according to the terms of an agreement between the commissioners of Joachim Murat and the grand duke, concluded April 20; and the congress of Vienna added to Tuscany the Stato del Presidj, the part of Elba which had hitherto been in the possession of the king of Naples, the principality of Piombino, and some other districts. On the second occupation of Paris, the masterpieces of art which had been carried off from the Florentine gallery were restored. The grand duke was once more obliged to leave his capital. In 1815, when Joachim Murat died, Ferdinand had already married his father-in-law, the princess Josephine de Beauharnais, daughter of the first Napoleon, and had entered upon the government of Tuscany. In 1820, the congress of Verona deprived him of his kingdom.

Ferdinand died in Florence April 20, 1815, after the defeat of the Neapolitans by the Austrian general count Nugent, at Pistoiá (April 10). By the treaty of Paris, of 1817, it was provided, that, on the death of Maria Louisa, archduchess of Parma, Lucca should also be added to Tuscany, on condition that the archduke should cede to the duke of Reichstadt his Bohemian states. Ferdinand lost his first wife, a Neapolitan princess, in 1820; and married, in 1821, Mary of Saxony, the eldest sister of his daughter-in-law. He died June 17, 1824. He was succeeded by his only son,

FERDINAND VII. It is very difficult to attain an accurate idea of the character of individuals in high stations. Few men have been portrayed better than the late king of Spain, and fewer have been so imperfectly understood. Ferdinand VII., king of Spain (and of the Indies, as he styled himself), was the son of Charles IV., and of Maria Louisa de Bourbon, daughter of the Infant of Spain, don Philip, grand duke of Parma and Placentia, son of Philip V., of Spain; consequently Maria Louisa was cousin and wife of Charles IV., and mother and second cousin of Ferdinand, who was born Oct. 14, 1784. The heir to the crown of Spain has the title of prince of Asturias, in which capacity he was recognised in December 1789, by the cortes of the kingdom. Ferdinand VII. was born with a very weak constitution, and very prone to various maladies during his infancy. The preceptors of his youth were all men of great merit. The celebrated canon Escoiquiz was his teacher in ethics, moral philosophy, and history. The celebrated father Miguel Scio, the author of an excellent translation of the Bible, elected him to this task; the king had much learning, superintended his religious and biblical studies. He received lessons in military tactics from colonel Maturana, an officer of artillery, and a highly meritorious character. Scarcely had Ferdinand passed through the dangers of infancy, when he began to experience the hatred of his mother. This hatred was inspired by the prince of peace (Godoy), who saw an unsurmountable obstacle to his ambition in the heir-apparent of the crown. Ferdinand was constantly persecuted, and his youth may be said to have been passed in the midst of tribulations. He was, for several years, deprived of all communication with his father, and of the society of his courtiers who were appointed to watch his person. Oct. 6, 1801, he was married to Maria Antonia Theresa of Bourbon, a princess of Naples, his cousin. This princess was highly accomplished. Possessing an elevated mind, and great independence of character, she was unafraid of the scandalous proceedings of the court. Ferdinand, under the influence of the dukes of San Carlos and Infiante, became jealous of his wife, and even offered her some gross insults. After a most difficult labour and long sickness, during which she was barbarously separated from her husband, she fell a victim to a violent medicine, May 21, 1806. An apothecary of the court shot himself some months after, leaving a written paper, in which he confessed the part he had taken in the death of the princess. Ferdinand was married a second time, Sept. 29, 1816, to Maria Isabel of Draguignan, princess of Burgundy, who died in December, 1818, in a fit. An operation was performed to extract the fetus from the womb of the unfortunate queen. He married a third time, on the 2d of October, 1819, Maria Joseph Amelia, a princess of Saxony, who died in 1829. His fourth and last wife, Maria Cristina (born 1806), the present queen-regent, is the daughter of the king of Naples, Francis I.

A short time after the conspiracy against the life of Charles IV. took place, Ferdinand was arrested, and a process was instituted to discover the authors of the plot; but, after a great deal of scandal, the natural goodness of Charles induced him to pardon Ferdinand. Several persons of rank were exiled; among them, the dukes of San Carlos and Infante. Napoleon was consulted by Ferdinand in the year 1807. Count Beaumarchais, the ambassador of Napoleon, promised Ferdinand the support of his master. The project was interrupted. Godoy, a man who hated Godoy, thinking that all the harsh treatment which Ferdinand experienced was the effect of the machinations of the prince of peace, and the queen, began to talk publicly of the misfortunes of Ferdinand; and neither the decrees of Charles IV., of the 30th of October, 1807, in which he announced to the nation the conduct of his son, nor the steps taken by his majesty, of making Napoleon the arbitrator between his son and himself, could induce the nation to believe that his son was in the wrong. From this time, the prince of Asturias was the people's idol; and, on the 19th of March, 1808, Charles was forced to abdicate the crown in favour of his son. Immediately after the abdication, the ex-king, with his queen, departed for France. Soon after, Ferdinand received an invitation to go to Burgos to meet Napoleon. The new king departed from Madrid in the beginning of April. When he arrived at Burgos, it was already dusk, and the king had gone as far as Vittoria, and thence to Bayonne, in France. At Bayonne, he abdicated, not, as is commonly believed, in consequence of force being used, but after mature reflection, and having previously taken the advice of several of the grandees and other persons of rank there; afterwards, on a man named Napoleon on his brother Joseph, then king of Naples. The grandees, tribunals, and the deputies of the old cortes of the kingdom, swore obedience to the new king. Charles IV. and his wife went from Bayonne to Bourdeaux, thence to Marseilles, and afterwards to Rome. Ferdinand was sent to Valengay, where he remained till after the disastrous campaign of 1813, when, in consequence of a treaty with Napoleon, in the month of December, he returned to Spain.

Thus released from a captivity of six years, the young monarch, in company with his uncle, the Infant don Antonio, and his brother, don Carlos, a soldier of genius, and the protector of his life, left the castle of his incarceration, the castle of San Carlos on the Catalonian frontier, March 24, 1814. Marshal Suchet was charged with the safe conduct of the king to the frontier; and, on the latter's arrival at the limits of the Spanish territory, the decree of the cortes and the regency was immediately communicated to him. During his journey, he could not avoid the kind and paternal tone of Ferdinand. He gave the most unequivocal assurances that, as the common father of his people, he had determined to collect the members of every party under the royal mantle, and
to form of them but one party. He professed to be perfectly satisfied with the arrangements that had been adopted respecting his approach to the capital, and the restrictions imposed upon his conduct; nor did he exercise a single act of sovereignty while he remained in Catalonia. Taking into view the liberal professions made by Ferdinand at that time, with his subsequent conduct, it is difficult to ascribe his pro-
cessions then to any other motives than those of the
base hypocrisy. Instead of taking the road pro-
scribed by the cortes, through Valencia, the king went by Saragossa, alleging, as the reason of this
change, his anxiety to view the ruins of that cele-
brated city, and thus pay a compliment to its brave
inhabitants. At length, however, he proceeded to
Valencia, where he fixed his abode, avoiding Madrid,
and maintaining the most alarming silence on the
subject of the constitution, which he had been re-
quired and requested to accept. The cardinal of
Bourbon went to obtain his signature and oath; but,
on being admitted to an audience, the king insisted
on being allowed to offer certain observations
peculiar to the circumstances of the case, whereupon,
that of kissing his hand as a token of vassalage.
This act was forbidden by the cortes. The cardinal
kissed his hand, and was, nevertheless, exiled, with
the loss of a great part of his ecclesiastical emolu-
ments. At length, Ferdinand judged himself strong
economically and his desire of obtaining the title of
Duke was issued. The cortes were denounced as an illegal
body. The decree, among other things, says, "But
concerning the labours of the present assembly, I de-
clare, that my royal intention is, not only not to swear
or accede to the said constitution, or to any decree
of the general and extraordinary cortes, and of the
ordinary at the present sitting, those, to wit, which
derogate from the rights and prerogatives of my
sovereignty, established by the constitution and the
laws under which the nation has lived in times past;
but to pronounce that constitution and such decrees
null and of no effect, now or at any other time, as if
such decrees and acts had never passed, and that they
are entirely abrogated, and without any obligation
on my people and subjects, of whatever class or con-
dition, to fulfil or observe them." This perfidious
decree ended by declaring that the session of the
cortes had ceased, and that whoever should oppose
this royal decree should be held guilty of high trea-
sor, and sentenced with infamy.
From the promulgation of the decrees of May 4,
may be dated what has not unappropriately been de-
nominated the reign of terror. Ferdinand, supported
by traitors to their oaths, pursued the most despotic
course from 1814 till 1820. During those six years,
a vast number of patriots perished on the scaffold;
the possessions on the coast of Africa were throned
with the most virtuous Spaniards. The foreign
ministers did not make the least attempt to save the
numerous victims of this most cruel despotism. The
duke of Wellington came from Paris, May 24, to
compliment the king on his restoration to the throne,
and to his right footing. The event of the battle of
Borodino was then a singular event, and Ferdinand
accepted it with cheerfulness on the night of
March 8, 1820, and issued his first decree, with the
same appearance of good-will as he had done the
memorable one of July 21, 1814, re-establishing the
inquisition. During the time of the constitution, he
wielded power without opposition, and his right to
the throne was recognized by the cortes, who
remained in the old, and, declared on their
trials. When the armies of France entered Spain, in
1825, under the command of the duke of Angouleme,
he left Madrid for Seville, where he remained for a
few months, where he issued his touching appeal to
all classes of Spaniards, young and old, to take up
arms, and defend the country and its liberties. The
approach of the French to Seville made the removal
of the government to Cadiz, the cradle of Spanish
liberty, necessary. His majesty refused to depart
for this place, under the plea that his conscience did
not permit him so to aggravate the evils of his
people; however, he was willing to go as a simple
individual. A regency was formed according to the
terms of the constitution, and the king went to Cadiz.
While there, he entered into a correspondence with
the French at Puerto de Santa Maria, by means of
kites. This correspondence was continued for some
time, till the authorities put an end to it by sending
up other kites; the inhabitants also raised them in
great numbers. It is to be observed, that the king
was restored to his dignity as soon as he arrived at
the city. The time of the capitalization having ar-
vived, his majesty departed from Cadiz to meet his
cousin of Angouleme, at Puerto de Santa Maria. He
issued a decree at Cadiz, September 30, which was
annulled by the decree of Puerto de Santa Maria, of
October 16. Indignant at this decision, the court of Fer-
inand in 1834, Spain was subjected to a terrible des-
potism.
Ferdinand was a man totally without character,
and, without being naturally bad, did more injury to
the unhappy nation which he governed, than if he
had been an actual tyrant. His rule was marked with
the general features of a Bourbon;
his nose was aquiline, and almost covered his mouth,
threatening to come in contact with his chin; his
height was about five feet five or six inches. One
of his principal favours was a low-born man, once
the sweeper of the palace stairs, called Pedro Collado,
but generally known by the nickname of Chamarro.
This man's good-will was the surest road to the
graces of the king.
FERDUISI, or FERDOUSI, Tshak Ben Scheriff-
schah, the greatest epic poet of the Persians, was
born at Thus, and flourished about 1020 A.D. His
curiosity was excited and gratified by the ancient
history of Persia, and he determined to adorn it with
the charms of verse. On account of some difficulties,
he went to Ghazne (Ghazine), where the sultan
Mahmoud then held his court, and attracted and
collected the poets and learned men by his patron-
age. He entered the gardens of the royal palace,
and found the poet in the midst of the brood of
kites, with the arbour, with two of his disciples, engaged
in making extempore verses. Ferdusi approached them,
and joined them in their occupation. Anasari,
astonished to hear a stranger, in peasant's clothing,
express himself with so much elegance, entered into
discussion with him, discovered the purpose of his
visit, and informed the sultan. Mahmoud afterwards
ordered him to finish the Persian work, the ancient
Shanameh or Bastanameh (literally, The Old Book),
which contains the history of Persia, and which had
been begun by Dakiki, and continued a century
later by Aissi, promising him a piece of gold for
each verse. Ferdusi devoted ten years of the latter
part of his life to this work, and produced an histori-
cal poem of 90,000 verses, entitled Shanameh (Book
of the Kings), containing the history of the Persians
from Nourshirvan to Yazdegard, and consisting,
properly, of a succession of historical epics. The
achievements of the hero Rustan, the Persian Her-
cules, form one of the finest poems. Ferdusi
presented his poem to the sultan, whose favour had
been alienated by the calumnies of the enemies of
the poet, and who gave him only a piece of silver for
each verse. Indignant at this treatment, Ferdusi struck
out a number of verses, in praise of Mianoud, who
he had inserted in his poem, and after years, continued
bitter satire on the sultan (to be found in Jones's
Poêses
FERGUSSON—FERMENTATION.

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Asiaitic Comment.). Compelled to fly, he retired to This, where he lived in concealment. Meantime, Mahmoud became incapable of further injuries, and, having ascertained that Ferdusi was still alive, and in want, he ordered twelve camels, loaded with rich presents, to be sent to the poet. They arrived at the door of his house as his corpse was brought out for burial.

The Khamsheh is one of the finest Asiatic poems. No work in the Persian language can be compared with it. It is inestimable as a history, although, as yet, but little used. A fragment, called Sahreb, appeared in Calcutta, 1814, with an English translation, by Atkinson. In 1811, professor Lumsden began to publish the whole, which was estimated to make eighteen vols. fol.; only one volume has as yet appeared. Gorges, 1829, gave an abridgment of the whole in two vols. An English translation, commenced by Champion, 1788, is still unfinished. Fragments may be found transmitted in Jones’s Commentaries, in Wilken’s Persian Christendom, in Schlegel’s Europa, in the Deutschen Merkur, in the Fundgruben des Orient, and in Von Hammer’s Geschichte der Schone Redekunst Persiens.

FERGUSSON, ADAM, an eminent historical and political writer, was born in 1724, at Logierait, in Scotland, of which parish his father was minister. He was educated at Perth and St. Andrews, whence he went to Edinburgh University, and was ordained. He served as chaplain in the 42d regiment of foot, but, on the peace of Aix-la-Chapelle, returned to Edinburgh, where, in 1759, he was made professor of natural philosophy, and afterwards of moral philosophy. In 1767 appeared his Essay on Civil Society. In 1773, he accompanied the earl of Chesterfield on his travels. In 1776, he replied to doctor Price on Civil Liberty, and was rewarded by the appointment of secretary to the mission sent to America in 1778, to effect a reconciliation between the two countries. On his return, he resumed the duties of his professorship, and composed his History of the Roman Republic, which was published in 1783, in three vols. 4to. In 1793, he published his lectures in the form of a Treatise on Moral and Political Science, in two vols. 4to. He died February 16, 1810.

FERGUSON, JAMES, an eminent experimental philosopher and astronomer, was born poor parents at Keith, in Banffshire, in 1710. He learned to read by hearing his father teach his elder brother, and very early discovered a peculiar taste for mechanics, by making a wooden clock, after being once shown the inside of one. As soon as his age would permit, he was employed by a farmer to tend his sheep, in which situation he acquired a knowledge of the stars, and constructed a celestial globe. This extraordinary ingenuity becoming known to the neighbouring gentry, they enabled him to obtain instruction in mathematics and drawing, in which latter art his improvement was so rapid, that he resided to Edinburgh, and brought in miniature, by which employment he supported himself for many years. In 1743, he repaired to London, where he was introduced to the royal society, and published astronomical tables and lectures. He also gave lectures in experimental philosophy, and among his pupils was Mr. III., who afterwards settled on him a pension of £60 a year. In 1763, he was chosen a member of the royal society, without the usual fees; and such were his frugality and the presents privately made him, that he died worth £6000. He was well acquainted with astronomical and experimental and natural philosophy; but his mathematical knowledge was very limited, and of algebra he knew little beyond the notation. His death took place in 1776. His works are, Astronomical Tables and Precepts, Svo.; Astronomy Explained; Introduction to Astronomy; Tables and Tracts; Lectures in Mechanic, Hydrostatics, Pneumatics, and Optics; Select Mechanical Exercises; The Art of Drawing in Perspective; An Introduction to Electricity; Three Letters to the Rev. John Kennedy; and several papers in the Philosophical Transactions.

FERGUSSON, ROBERT; a Scottish poet, of distinguished merit, was born at Edinburgh, September 5, 1751. He spent six years at the schools of Edinburgh and Dundee, and afterwards studied at the metropolitan university and at St. Andrews. He was at one time destined for the kirk of Scotland; but he relinquished his prospects of ecclesiastical preferment, and became clerk to a writer to the signet—a title which designates a peculiar order of Scottish attorneys. He wrote poems, both in pure English and in the Scottish dialect. His poems are the careless effusions of an irregular, though amiable young man, who died in early youth. His conversational talents rendered his society highly attractive—an accomplishment which proved detrimental to the poet. The excesses into which he was led impaired his feeble constitution, and brought on disease, which terminated his existence October 16, 1774. He was buried in the Canongate churchyard, Edinburgh, where a monument was erected to the memory of this kindred genius. His poems have been often printed.

FERMANAGH, a county of Ireland, in the province of Ulster, about forty-five miles in length and thirty-four in breadth, bounded on the east by the counties of Monaghan and Tyrone, on the south by those of Cavan and Leitrim, and on the north by the county of Donegal. Lough Erne divides the county nearly throughout its whole extent from north-west to south-west. The chief occupations of the inhabitants consist in rearing black cattle and manufacturing linen. Enniskillen is the county town. Population of the county in 1831, 149,542.

FERMENTATION; the spontaneous changes which vegetable matter undergoes when exposed to ordinary atmospheric temperature. So long as vegetable substances remain in connexion with the living plants by which they were produced, the tendency of the processes of decomposition is controlled; but, as soon as the vital principle is extinct, they become subject to the unrestrained influence of chemical affinity. Owing to the difference in the constitution of different vegetable compounds, however, they are not all equally prone to fermentation; nor is the nature of the change the same in all of them. Thus alcohol, oxalic, acetic, and benzoic acids, may be kept indefinitely without alteration; while others, such as glucose, sugar, starch, and mucilaginous substances are very liable to decomposition. In like manner, the spontaneous change sometimes terminates in the formation of sugar; at another time, in that of alcohol; occasionally, in that of acetic acid; and, at a fourth, in the total dissolution of the substance. This has led to the division of the fermentative processes into four distinct kinds, viz., the saccharine, the vinous, the acetous, and the putrefac-tive fermentation. The only substance known to undergo the saccharine fermentation is water. When this substance is kept moist for a considerable length of time, a change gradually ensues, and a quantity of sugar equal to about half the weight of the starch employed is generated. Exposure to the atmosphere is not necessary to this change, though the quantity of sugar is increased by the access of air. The conditions requisite to this fermentation are the following, viz., the presence of sugar.
FERMENTATION.

water, yeast, and a certain temperature. To observe the chemical changes which occur, we must dissolve five parts of sugar in about twenty of water, adding a little yeast, and introducing the mixture into a glass flask, furnished with a stop tube, the extremity of which is closed by a spheric cover. This spheric cover is fitted into a inverted jar full of water or mercury, and is kept at a temperature of 60° or 70° Fahr. to the materials. In a short time, we shall observe the syrup to become muddy, and a multitude of air bubbles to form around the ferment; these unite, and, attaching themselves to particles of the yeast, rise along with it to the surface, forming a stream of froth. The yeast will then engage itself from the air, fall to the bottom of the vessel, to acquire buoyancy a second time, and so on.

The fermentation will continue for two or three days, when it will terminate, leaving the impurities to subside, and the liquor clear and transparent. The only appreciable change which is found to have occurred during the process, are the disappearance of the sugar, and the formation of alcohol which remains in the flask, and of carbonic acid which is collected in the inverted jar. The yeast appears to have operated only by bringing on the fermentation, without further contributing to the products. The atmosphere has been excluded from the manufacture; the apparatus, can have exercised no effect upon the result. The true theory of the process is founded on the fact, that the sugar, which disappears, is almost precisely equal to the united weights of the alcohol and carbonic acid; and hence the former is supposed to be resolved, during the process, into the two latter; though a solution of pure sugar is not susceptible of the vinous fermentation, without being mixed with yeast, yet the saccharine juices of plants do not require the addition of that substance; or, in other words, they contain some principle, which, like yeast, excites the fermentative process. Thus the juice of the grape, the apple, &c., ferments spontaneously, but not without exposing access to the air; from which it would appear, that it must contain a principle which is convertible into yeast, or, at least, into a compound, which acquires the characteristic property of that substance, by absorbing oxygen.

The various kinds of stimulating fluids, prepared by means of the vinous fermentation, are divisible into wines, which are formed from the juices of saccharine fruits, and the various kinds of ale and beer produced from a decoction of the nutritive grains previously malted. The juice of the grape is superior, for the purpose of making wine, to that of all other fruits, not merely in containing a larger proportion of saccharine matter, since this deficiency may be supplied artificially, but in the nature of its acid. The chief or only acidulol principle of the nature grape, ripened in a warm climate, such as Spain, Portugal, or Madeira, is the bitartrate of potash. As this salt is insoluble in alcohol, the greater part of it is not able to be reduced during the vinous fermentation, and an additional quantity subsides, constituting the curd, during the progress of wine towards its point of highest perfection. The juices of other fruits, on the contrary, such as the gooseberry or currant, contain the malic or citric acids, which are soluble both in water and alcohol, and which, therefore, can never be preserved. Consequently, these wines are only rendered palatable by the presence of free sugar, which conceals the taste of the acid; and hence it is necessary to arrest the progress of the fermentation long before the whole of the saccharine matter is consumed. For the same reason, these wines do not acquire the character of being long-continued, since the free sugar is converted into alcohol, by the slow fermentative process, which may be retarded by the addition of brandy, but cannot be prevented, the liquor acquires a strong, sour taste.

Ale and beer differ from wines, in containing a large quantity of mucilaginous and extractive matters, derived from the malt with which they are made. From the presence of these substances, they always contain more free acid, and are greatly disposed to pass into the aceto-sour fermentation. The sour taste is concealed partly by free sugar, and partly by the bitter flavour of the hop, the presence of which diminishes the tendency to the formation of an acid. The fermentative process, which takes place in beer, or, of a smaller degree, in ale, suspends the formation of good bread, has been supposed, by some, to be of a peculiar kind, and accordingly designated by the name of the Panay fermentation. More recent researches upon this subject, however, leave little doubt that the phenomena are to be ascribed to the saccharine matter of the flour undergoing the vinous fermentation, by which it is resolved into alcohol and carbonic acid. When any liquid has undergone the vinous fermentation, or even pure alcohol, diluted with water, is mixed with yeast, and exposed in a warm place to the open air, the aceto-sour fermentation takes place. This change is attended by a peculiar development of heat and carbonic acid gas; the fluid, at the same time, becoming turbid, from the deposition of a peculiar filamentous matter. This process goes on tardily below 60° Fahr.; at 50°, is very sluggish; and at 32°, is wholly arrested. On the contrary, when the temperature is as high as 80°, it proceeds with vigour. It is necessary to distinguish between the mere formation of acetic acid, and the aceto-sour fermentation. Most vegetable substances yield acetic acid, when they undergo spontaneous decomposition; and inferior kinds of ale and beer are known to acquire acidity in a short time, even when confined in well corked bottles. These processes, and a variety of others, however, are quite different from the proper aceto-sour fermentation, above described, being unattended with visible movement in the liquid, with the absorption of oxygen from the air, or the evolution of carbonic acid. The true aceto-sour fermentation consists in the conversion of the alcohol into acetic acid, the quantity of the latter being precisely proportional to that of the former. The nature of the chemical action is, however, at present, obscure. It has been imagined that pure alcohol contains a greater proportional quantity of carbon and hydrogen than acetic acid; that the oxygen of the atmosphere, the presence of which is indispensable, abstracts so much of those elements, by giving rise to the formation of carbonic acid and water, as to leave the remaining carbon, hydrogen and oxygen of the alcohol, in the precise ratio for forming acetic acid.

The aceto-sour fermentation is conducted on a large scale, for yielding the common vinegar of commerce.

In France, it is prepared by exposing weak wines to the air during warm weather. In England, it is made from a solution of brown sugar or molasses, or an infusion of malt. The vinegar thus obtained, however, always contains a large quantity of mucilaginous and other vegetable matters, the presence of which is indispensable, abstracts so much of those elements, by giving rise to the formation of carbonic acid and water, as to leave the remaining carbon, hydrogen and oxygen of the alcohol, in the precise ratio for forming acetic acid.

The putrefactive fermentation is confined to those vegetable substances, in which the oxygen and hydrogen exist, in a proportion to form water; and in such, particularly, as contain nitrogen. Those proximate principles, in which it prevails, are: fishes, oils, fats, resins, and alcohol, do not undergo the putrefactive fermentation; nor do acids, which contain a considerable excess of oxygen, man-
fest a tendency to suffer this change. The conditions requisite for enabling the putrefactive process to come about, are a high temperature.

The temperature most favourable is between 60° and 100° Fahrenheit. The products of the process may be divided into the solid, liquid, and gaseous. The liquids are chiefly water, together with a little acetic acid and oil. The gaseous products are light, carbonic acid, carbon dioxide, and when nitrogen is present, amonia. Pure hydrogen, and probably nitrogen, are sometimes disengaged. Another elastic principle, supposed to arise from putrefying vegetable remains, is the notious misamata of marshes. The origin of these, however, is exceedingly obscure. The solid product is a dark, pul
tulent substance, consisting of charcoal, combined with a little oxygen and hydrogen, which, when mixed with a proper quantity of earth, is called vegetable mould.

FERNANDO DE NORONHA, or NARONHO; an island in the Atlantic, full of mountains, which have the appearance of volcanoes, but are covered with verdure; not above three miles in length, and in shape resembling a laurel leaf; about 210 miles from the coast of Brazil; lon. 32° 38' W.; lat. 3° 56' S. It is defended with forts. The water is in general brackish, and sometimes no rain falls for three or four years together. It is a celebrated place for banishment for male criminals; no females are permitted to visit the island. The garrison, consisting of about 120 men, is relieved yearly.

FERNANDO PO, or FERNAND PAO; an island of Africa, in the Atlantic, near the coast of Benin, about 5 miles in circumference. The land lies high, and the soil is fertile in manioc, sugar-canes, rice, fruit, and tobacco. The inhabitants are rude and uncivilized. Lon. 8° 40' E.; lat. 3° 28' N. Population, 1200.

FERNEY; a village famous for having been a long time the residence of Voltaire, in the French department of the Ain, on the frontiers of Switzerland, about 5 miles from Geneva. Under Louis XIII. and XIV., the Habitants, who were mostly Protestants, were compelled to leave their country to escape religious persecution. Voltaire purchased an estate there in 1762, and endeavoured, by his activity, and the assistance of every kind which he extended to settlers, to increase the village, to introduce the mechanic arts, and especially the manufacture of clocks, by means of skilful workmen, whom he brought from Geneva. The numerous foreigners also contributed to the progress of the world, and to the fame of Voltaire, the man of the age, contributed to enrich the place. In 1775, its population amounted to 1200. After the death of Voltaire, it declined very rapidly, and contains at present but 690 inhabitants. The chateau which Voltaire occupied is kept by his heirs in the same state in which he left it, and is visited as an object of curiosity by travellers.

FERNOW, CHARLES LOUIS, a distinguished German writer on the fine arts, was born November 19, 1763, at Binnenhagen, in the Uckermark, where his father was a common labourer. His early years were those of a talented youth struggling with poverty and study difficulties; he had, besides, the misfortune to shoot an acquaintance by accident. After finishing his apprenticeship to an apothecary, he became acquainted with Mr Carstens, to whom he was much indebted for the cultivation of his talents. He soon abandoned his business, and maintained himself by portrait painting and giving lessons in drawing. After some time, he went to Geneva, where he became acquainted with many literary men; among others, with Baggesen, who proposed to Fernow to accompany him to Switzerland and Italy. He performed part of the journey with Baggesen, and continued it by the aid of others. In 1794, he arrived in Rome, where he found Mr Carstens, with whom he lived. He now began the study of the theory and history of the fine arts, and Italian literature, and, when he ceased to receive assistance from his friends, delivered lectures. In 1803, he returned to Germany, married an Italian lady, and was appointed Kapellmeister at the university of Jena. In 1804, he received an appointment at Weimar, where he died Dec. 4, 1808.

His Romische Studien (Roman Studies), Zurich, 1806—1808, 3 vols.; his learned and tasteful edition of the Italian poets, Jena, 1807—1809, 12 vols.; and his Italienische Sprachlehrer (Italian Grammar), second edit., Tubingen, 1815, 2 vols., preserve his name in literature. We also owe to him the biography of his friend Carstens, and the commencement of the edition of Winckelmann's works. Fernow's life has been written by his friend Johanne Schopenhauer.

FERNS (fllices); a family of plants, included by Linnaeus in his class cryptogamia. They are herbaceous, or shrubby, and some tropical species are arboretous. The fructification is inconspicuous, generally consisting of very small capsules, placed on the inferior surface of the frond, but sometimes upon a distinct stem; the seeds are very numerous, and extremely minute; the frond is simple, lobed, or pinnated, but more frequently pinnated, and involute when young. This family includes many genera, and a great number of species which inhabit the whole earth, some of them being confined, particularly in the northern hemisphere, while others are very much limited in their range. Between the tropics, several species form small trees, having something of the aspect of palms, and are considered one of the greatest ornaments of those regions. One climbing fern (lygodium palmatum) inhabits the United States, but is rare, though it occurs as far north as Boston.

FERONIA; one of the most ancient Italian goddesses, who presided over woods and orchards. The ancient grove, not far from Aixur (Terracina), was consecrated to her, and is very celebrated. Emanated slaves received a cap in her temple as a badge of freedom.

FERRARA; formerly a duchy in Upper Italy. The ancient house of Este, originally from Tuscany, and distinguished as early as the ninth century, held the office of vicars in Ferrara. (See Este.) The male line of this house having become extinct in 1597, the succession devolved on duke Caesar, of a collateral line, from whom Clement VIII. wrested it in 1598, and annexed it to the States of the Church, as a vacant fief. The dukes of Modena endeavoured
FERREIRA—FESCENINE VERSES.

to establish their claims upon it without success. 
The chief city, Ferrara, in a low and unhealthy plain, 
on an arm of the Po, contains 3,500 houses, 23,600 
inhabitants; upwards of 100 churches, a university, a 
museum, &c. Under the dukes of Este, it contained 
80,000 in 1500, but the isolation and retired character 
of the court of Italy. It is now comparatively solitary and 
forsoaked. The streets are broad and regular, but 
deserted; its palaces large and splendid, but little 
inhabited. The castle, the residence of the papal 
legatees, still contains some remains of elegant fresco 
paintings, by Dossi and Titian. It is adorned with 
many fine pictures, particularly by Garofalo, one of 
Raphael's scholars, who formerly resided here. The 
cathedral, with an ancient Gothic front, but built in 
a modern style in the interior, is a large building, of 
a not very attractive appearance. The public library, 
where, besides very valuable collections of old manus-
scripts, antiquities, coins, &c., there are many monu-
ments of the former glories of the city, is a more 
pleasing edifice. Here is shown Ariosto's inkstand and 
chair, the manuscript of his satires, several let-
ters, and his monument, which was brought hither 
from the church of St Benedetto, where he lies buried. 
Here, too, is preserved the manuscript of the Pastor 
Pietatis, with which was added and many removed 
parts of which is his Rime, with the dedication to Leonora 
of Este, a manuscript of the Jerusalem Delivered, by 
another hand, in which he corrected some passages 
in the margin, several letters, &c. In the hospital of 
St Ann, a marble tablet, with a proud inscription, 
stands over the wet and gloomy dungeons, in which 
the cruelty of duke Alfonso compelled the poet to 
languish for seven years. (See Estes and Tasso.) 
More pleasant are the recollections of Ariosto. One 
of the squares in the city is called the Piazza Ariosta, 
in honour of him; and his house, covered with inscrip-
tions, is revered as a sacred spot by the inhabitants 
and strangers. The fortifications of Ferrara are 
strong. By the decree of the congress of Vienna, 
Austria has a right to maintain a garrison there.

FERREIRA, ANTONIO; one of the classic poets 
of Portugal, was born at Lisbon, 1528. He carried 
to perfection the elegiac and epistolary style, already 
attempted with success by Sá de Miranda, and 
also made poetry out of the epigram, ode, and 
tragedy. His Ines de Castro is the second regular tragedy that appeared after 
the revival of letters in Europe. It was preceded only 
by Trissino's Sofonisba. It is still considered by 
the Portuguese as one of the finest monuments of their 
literature, for its deep pathos and the perfection of 
its style. The works of Ferreira are not numerous, 
as his judicial office left him little leisure. He died 
1569. Dias Gomes says of him, The rendering 
of Horace, the desire of imitating Miranda, and the 
natural severity of his genius, led him to cultivate 
conceit and his style, which he carried so far as 
always to sacrifice harmony to thought. All 
his works are distinguished by soundness and depth of 
thinking. His expression is strong, rather than 
sweet, is extremely animated, and full of that fire 
which elevates the mind and warms the heart. He 
understood well the utile dulci of the Roman lyric 
poet. His Poemais Lisitanaos appeared complete at 
Lisbon in 1562, 4to, and Todas as Obras de 
Ferreira, Lisbon, 1771, 2 vols.

FERREIROS, JUAN DE; a Spanish historian, born 
at Labaneza, 1652, of a noble but poor family. A 
patrial uncle superintended the education of the young 
Ferreiras, and sent him to the Jesuit's college of 
the Hospital de Leon. After having learned the 
Latin and Greek languages, he studied poetry, en-
trophy, philosophy, and theology, in three Dominican 
monasteries. He distinguished himself everywhere 
by his penetration and diligence, and gained the 
affectations of all by his gentleness of character and 
his good deportment. Ferreras was designed for the 
church, and completed his studies at the university 
of Salamanca. His eloquence gave him a high 
reputation, and he resided and taught in the 
university of Ferrara, in Italy. The marquis de Mendoza, a lover of the muse and of 
literature, he not only improved his former knowledge, 
but also learned the difficult art of the historian. 
His inclination for theological studies was revived at 
a later period, and he wrote a complete system of 
those sciences. His reputation continually increased, 
and he was gradually advanced from one station of honour to 
another, and was employed in the service of the 
congregation of the inquisition. Other high dignities 
he refused. The new Spanish academy made him 
one of its members in 1713, and he rendered important 
assistance in the preparation of the Spanish dic-
tionary, which appeared in 1739. At the same time, 
Philip V. appointed him his librarian. Here he 
continued the History of Spain, begun in his earlier 
years. After having discharged this office for sev-
eral years, he died in 1735, aged eighty-three. He 
left, in all, thirty-eight works, some of which have 
ever been printed. The Historia de España (Madrid, 
1700—1723.) is divided into two parts. In the first, 
he has contributed much to correct and illustrate the 
history of Spain. It extends from the first origin of 
the people of Spain to 1589, and deserves the fullest 
confidence. The style is pure, manly, and concise, 
though sometimes deficient in vivacity and elegance. 
In this respect he is inferior to Mariana.

FERRET (mustela furo, L.). This little animal, 
almost generally admitted by naturalists as a distinc-
tive species, is thought by Cuvier to be only a 
variety of the common pole-cat (M. putorius). It is 
distinguished by having a sharp nose, red and fiery 
eyes, and round ears. The colour of its whole body is 
a pale yellow, somewhat resembling that of boxwood. 
It is a native of Barbary, though it is extensively 
naturalized in Spain, where it was introduced to rid 
that country from the multitudes of rabbits with 
which it was overrun. Its habits are similar to those of 
the other species of wattels. It is lively and 
active, and an inveterate destroyer of rabbits. If a 
death rat is placed near it, it will instantly pounce upon it, 
seize it, and in a few moments, tear it open, and 
swallow it. Great numbers of these animals are 
imported into England and France, for the purpose of 
driving rabbits from their burrows. In such cases, 
they are muzzled, otherwise they would destroy the 
rabbits in their holes. They suck the blood of their 
prey, but seldom tear it. The ferret breeds in the 
last mentioned countries, bringing forth from five to 
nine young; but it is apt to degenerate, and lose its 
savage nature. The warreners in England use a 
crossed breed between this animal and the pole-cat. 
This hybrid is of a darker colour than the ferret.

FERRO, the most western of the Canary Isles, 
belongs to the crown of Spain. It is about eighty 
square miles in extent, and has 4000 inhabitants. A 
large linden tree upon this island has a cloud per-
tually resting on it, the moisture of which it collects 
in drops upon its leaves, and thus fills a cistern. 
Geography, as a preacher. In the image of St 
Ferreras, he studied and refined, and became the 
first meridian through this island, which is 20th W. lon. from Paris, 
and 17° 46' W. of Greenwich.

FERROCYANIC ACID. See Prussic Acid.

FERETTE; a prefix to many French geographical 
names, as Ferret-Alpes, Feret-Bernard. It is derived 
from the Latin, ferre, which, in Low-Latin, signifies a 
nmall fortress.

FESCENINE VERSES; so called from the town of 
Fescennia, in Etruria, where they were first used.
They were in the form of a dialogue between two persons, who satirize and ridicule each other's failings and vices; also a sort of dramatic poem, perhaps extemporaneous. The young Romans sang their carol-songs, and when the festivities, accompanying them with mimic motions. The emperor Augustus prohibited them, as tending to corrupt the public morals.

FESTIVALS AND HOLIDAYS. It is a deep-seated propensity of human nature to observe, with few solemnities, the periodical return of certain times, suspending the usual course of life, on certain days, for the purpose of cherishing, without interruption, the recollection of some important event, and assimilating the external circumstances of men with their internal feelings. The solemnization of festivals is an evidence of the nobler nature of man. Animals, guided only by instinct, pursue an unvaried course from day to day, while man introduces variety into his life, by exalting some days above their fellows. Hence we find him observing festivals peculiar to families, to places, to nations, and to religions. It is a mistaken view of human nature to regard in a narrow and prosaic view, to treat particular seasons of rejoicing and festivity as useless and sinful, rather than as of an elevating tendency. Their accordance with the wants of man's nature is evident from the fact, that we cannot do everything at all times, and are therefore obliged to assign different portions of our time to different employments. We cannot give ourselves up every moment to the recollection of the freedom of our country, to rejoicing on account of the birth of Christ, to thankfulness to God for his creating and preserving care, &c. It is expedient, then, to set apart certain days, in which we may live exclusively for each of these subjects of contemplation; and on such occasions the object which we commemorate acquires an additional degree of interest from our witnessing the participation of multitudes in the festival. We ought not, however, of course, to confine such contemplations to an appointed day, but should merely devote ourselves more especially to them at that time. The majority of Protestants have, in this respect, fallen into an extreme, while endeavouring to avoid the numerous festivals of the Romish church. In England, almost all the ecclesiastical festivals have either been abolished or are little regarded. In Ireland, the festivals are almost in general interest. On the festivals of the ancient Christians, see Augusti's Denkwürdigkeiten aus der alten Christlichen Archäologie, &c. (Memorabile Particulars of Ancient Christian Archeology, &c., Leipzig, 1817-1820, 3 vols.), and Zyligian's work, entitled Die Altere und Neueren Peste aller Christentheit in Consessionen (the Ancient and Modern Festivals of all Religious Confessions, Dantzic, 1825).

Festivals, or Feasts, Christian. All religions have festivals designed to cherish and renew a religious life. There is, indeed, no religion which has preserved a perfect independence. The existing older religions involuntarily influence it, whether appropriated to its service or opposed to it. As the traces of the religion of India in Judaism are undeniable, so also the latter had much influence on Christianity, which was in turn influenced by Paganism, insomuch as foreign religious notions are sought to offer the Gentiles a more than equivalent compensation for the pleasures which that had afforded them. If we apply these remarks to the subject of festivals, we shall no longer be surprised to find the counterparts of so many of those belonging to Christianity in foreign religions. The first festival observed by Christians was that of the resurrection of our Lord (Easter), which corresponded to the Passover of the Jews. The day of the outpouring of the Holy Spirit (Whitsunday) took the place of the Jewish Pentecost. Sunday became a weekly holiday in memory of the resurrection, and at the same time a substitute for the Sabbath. The emperor Augustus prohibited them, as tending to corrupt the public morals.

Festivals and holidays are very various: they are weekly (as Sunday) and yearly; ordinary, or extraordinary, moveable and immovable; great and high (e.g., Easter, Whitsunday, Christmas); middle and low; entire and half; old and new; general and particular. An ordinary moveable festival is SUSPENDING (such as Whit-Sunday, &c.; immovable, Christmas, Michaelmas, Twelfth-day (or Epiphany), Candlemas, St John's-day, Lady-day, &c. Extraordinary festivals, or holidays, are such as are appointed for special occasions. In the first centuries, the number of ecclesiastical festivals was very small, which may be easily accounted for by the adverse circumstances with which Christianity had to struggle at its commencement. In the most ancient times, we find, besides Sunday, only Good Friday, Easter, Whitsunday, and some not very precisely fixed commemorative festivals of certain martyrs, etc. No Christian church, however, did not admit fixed times. To these Christmas has been added, since the fourth century. But although it is impossible not to recognise in these festivals a Jewish, and, in part, also, a pagan origin, it was, nevertheless, subsequently ordained by special ecclesiastical regulations, that they should not be celebrated in communion with Jews, heathens, or heretics. The fundamental idea and design of these holy times and festivals was to keep alive the recollection of the principal blessings of Christianity, and of the Saviour; to excite thankfulness for the divine superintendence; and to encourage the practice of Christian virtues. It was customary to endeavour to prepare, by fasts, for the proper observance of these festivals, the latter being considered as days of rejoicing, in which the Christian, distracted by no profane business, should occupy himself solely with joyful contemplation and exercise in holy works. To prevent these festivals of rejoicing from degenerating, and to preserve the distinction between them and the heathen customs, the Christian church, from the time when it began to sway the state, implored the exercise of the civil power for the preservation of the purity of the holidays and customs, and for the prohibition of all public amusements. Let it be observed, however, that the church might be impairs. In this manner, the Christian festivals united the serious and moral character of the Jewish with a certain freedom and cheerfulness, which they acquired from the system of paganism. Although the holidays were feriae, that is, days on which all public and direct labour, as well as all amusements inimical to devotion, were to be intermitted, yet all of what are termed works of necessity, or charity, were not only allowed, but enjoined. On the other hand, a participation in divine worship was made the especial duty of every Christian; and not only the places appointed to religious services, but also the private dwellings of Christians, were decorated more than ordinarily, and Christians themselves were admonished to appear in a neat and cheerful dress. They abstained from fasting, and joined in the love-feasts, or Agape (q.v.); and, when these were intermitted, the poor, who were not the rich to feed the poor, or, at least, relieve them with their alms. The festivals distinguish the year into three great divisions. The first period, or division, in the calendar of the church, is the season of Christmas, or the time devoted to celebrating the incarnation, birth, and ministry of the Saviour. This holy season begins with the first Sunday in Advent, and lasts till the feast of Epiphany. (q.v.)
As to the time when the celebration of Christmas-day (see Christmas) was introduced, and the occasion of its origin, the opinions of the learned are divided. The birthday of Harpocrates among the Egyptians, and that of Mithras among the Persians, and also among the Romans, were kept on the 25th of December; and all the festive solemnities of Christmas-eve, and of the next twelve days, were already in use among the plays and amusements customarily observed in those seasons by the Egyptians, Indians, and Persians. The birthday festival of Christmas is immediately followed by three anniversaries of deaths; that in memory of the martyr Stephen, introduced before the church; that of the Saviour, that of John the Evangelist, and that of the Holy Innocents. Eight days after Christmas, the feast of the circumcision and naming of Jesus is observed, with which is connected the celebration of the commencement of the year, or new year's day. The festival of Epiphan- any, kept on the 6th of January, with which, before the origin of Christmas-day, the celebration of the nativity was connected, was one of the most eminent. It united, in itself, the most remarkable occurrences in the life of Jesus, in which the divine provisions for attestation to his character as the Son and Messenger of God were manifested, from the first moment of his existence to his last. The recurrence on his ministry. The whole of the youthful life of Jesus was historically represented in this festival, with a view to practical effect. That the adoration of Christ by the Magi, his baptism in Jordan, and his performance of his first miracle at Cana, in Galilee, should be united in one festival, will appear by no means strange, if we reflect how long it was before any particular festival was instituted in commemora- tion of such an important circumstance of sacred history as the birth of the Saviour. It is worthy of remark, too, that the very same day, the 6th of Janu- ary, was the greatest festival of the Egyptians, on which they solemnized the epiphany of Osiris—a day of rejoicing for the finding of Osiris. The second division, or period, is that of Easter (see Easter), or the holidays kept in memory of the death and resurrection of Jesus Christ. After the preparation of the forty days' fast of Lent, palm Sun- day opens the Easter holidays. The Greek church kept this festival very early. The Egyptians first began to celebrate it about the seventh century. On Maundy Thursday, the institution of the Lord's Supper, and the washing of the feet of the apostles by our Saviour, are commemorated. Traces of this festival are discoverable in the African church as early as the fourth century, and in the following cen- turies in the other churches. Next follows Good Friday, the anniversary of the death of Christ, kept as a day of grief and mourning. The celebration of this day is as ancient as that of Easter, and of Sun- day. The holy Sabbath, or Easter- eve, is the only one of all the Jewish Sabbath days that the Christian church has put in the category of all-epochs. The Easter, the feast of the resurrection of Jesus Christ, the oldest Christian festival, and the greatest, since all the other Sundays of the year are kept as octaves, or weekly representatives of it. As to the etymo- logy of its name, there is much disagreement among the learned. Easter is a day of rejoicing: the ex- pression has this for its signification. It is the day of the Greeks. The season of Easter is divided into two weeks—the week before Easter, or the black week, and the week after Easter, or the white week. This latter week is closed by the Whitsunday, or octave of Easter. In the third division, or period, is that of Whitsun- tide, or Pentecost (q. v.), commemorative of the descent of the Holy Spirit on the apostles, as described in the Acts. The earthly life of Christ, represented to the senses, and historically celebrated with festive solemnities by the church, was now ended. Christ now dwelt with the Father, and had sent the Com- forter to enlighten and strengthen the hearts of men. The most eminent festival in the season of Whitsun- tide is Ascension-day; and in the latter part of Whitsun- day, the season ends with the festival of the Holy Trinity, which was introduced not earlier than the ninth century in the Roman Catholic church; but is now the groundwork of the ecclesiastical computa- tion of the time till Advent. As to the Ascension and Whitsunday, we may, with certainty, consider them as harmonious, especially and generally observed as early as the fourth century. Thus the three divisions are completed. These, however, relate only to the festivals of our Lord. The other festivals occur in different parts of these periods. The worship of the virgin Mary began in the fifth century, at the time when the expression Hymna- nes, being proposed by Nestorius, and sanctioned by the council of Ephesus (431) and that of Chalcedon (451), acquired a peculiar importance. The expres- sion itself was already of long standing. The origin of this worship is enveloped in darkness. The festi- vals relating to the virgin and the other Mary in the Catholic church, are time 1. The feast of the annun- ciation; 2. the purification of the virgin, or Candle- mas; 3. the feast of the visitation of Our Lady; 4. the commemoration of Mary Magdalen; 5. the feast of the immaculate conception; 6. the nativity of the virgin; 7. the martyrdom of the virgin Mary; 8. the assumption of the virgin; and 9. several smaller fes- tivals in honour of the virgin. The first three are also kept in some Protestant churches. There are also days observed in memory of martyrs and apostles, and some others, in honour of different saints, and angels, and of Christ. The 1st of November is the feast of All-Saints. As early as the fourth cen- tury, the Greeks observed the octave of Whitsunday, now Trinity Sunday, as a general festival in honour of all martyrs and saints. (See All-Saints.) On the 2d of November, the festival of All-Souls is observed in the Catholic church, as a day of mourning and commemoration of such of the dead as are not yet admitted to the contemplation of their Maker. Odio of Clugny, in 1101, first introduced it. Odio had observed in 998, after which it gradually obtained reception in the church. The 29th of September is the festival of St Michael (Michaelmas), which is kept as a general festival in honour of the angels, and may be considered partly as a commemoration of the victory of the good principle over the bad, and partly as a children's feast (according to Matt. xviii. 1-11). August 6th is the festival of the transfigu- ration of Christ, which was celebrated with great rejoicing, particularly among the Greeks. The wor- ship of the cross has introduced two festivals; that of the invention of the holy cross (May 3), and that of the exaltation of the cross, the 14th of September, the festival of the holy body of Christ, or corpus Christi (see Corpus Christi), established in 1264, is observed on the Thurday after Trinity Sunday. On this day, in Catholic countries, the eucharist is carried in solemn procession, the object of the festival being the pres- servation of the belief in the real presence of Christ himself seen at the Table Talk, page 390, "The feast of corpus Christi has, of all others, the greatest and best appearance." In the eighteenth century, many feast days of the Catholic church were abolished, or transferred to Sundays. When the national ecclesiastical law of France Robespierre, acknowl- edged the existence of a Supreme Being and the immortality of the soul, and dedicated a national
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Festival, on the twentieth of Pranial, to the Deity, the following festivals, to be kept on the decade days of the republic, were also instituted—1. of the Supreme Being and nature; 2. of the human race; 3. of the French nation; 4. of the benefactors of mankind; 5. of liberty and equality; 6. of the martyrs of liberty; 7. of the republic; 8. of the freedom of the press; 9. of the love of country; 10. of the hatred of tyrants and traitors; 11. of truth; 12. of justice; 13. of modesty; 14. of fame and immortality; 15. of friendship; 16. of temperance; 17. of heroism; 18. of constancy; 19. of disinterestedness; 20. of stoicism; 21. of love; 22. of conjugal fidelity; 23. of filial affection; 24. of the love of children; 25. of youth; 26. of age; 27. of old age; 28. of misfortune; 29. of agriculture; 30. of industry; 31. of the forefathers; 32. of posterity and felicity.

There are thirty-four religious and four civil festivals observed by the established church of England and Ireland; and the Protestant Episcopal church in the United States of America observes thirty-two religious festivals in the year. Christian feasts are observed extensively and solemnly among Catholics, Greek and Roman, and the Protestants of the European continent, but have comparatively little attention paid to them by the Protestants of Britain.

FETICH; an idol. This word, now not unfrequently met with in French and German, was first brought into use by De Brosses, in his work Du Culte des Dieux Féthiques (1780), and is derived either from the Portuguese fetiso, a block adhered as an idol, or, according to Winterbottom, from feticeiros, an enchantress. The Portuguese gave this name to the idols of the negroes on the Senegal; and afterwards the word received a more extensive meaning. The general meaning given to fetich now seems to be, an object worshipped not representing a living figure. Such a figure is called, more properly, an idol. Hence stones, arms, vessels, plants, &c., which are objects of worship, are fetiches.

The negroes of Guinea suppose a fetich to preside over every canton or district, one also over each family and each individual, which the individual worships on the anniversary of his birth day. Those of the better sort have, besides this, weekly festivals, on which they kill a calf, and give to each of the inhabitants the material substances, which they worship, to be endowed with intelligence and the power of doing them good and evil, and also that the priest or fetichere, being of their council, is privy to all that those divinities know, and thence acquainted with the most secret thoughts and actions of men. The household or family fetich narrowly inspects the conduct of each individual in the house, and rewards or punishes each according to his deserts. The rewards consist in the multiplication of the slaves and wives of the worshippers, and the punishments in the deprivation of these; but the most terrible of all their punishments is death. At Cape Coast there is a public fetich, the highest in power and dignity. This is a rock that projects into the sea from the bottom of the cliff on which the castle is built. To this rock sacrifices are offered yearly by the priests, with ridiculous gestures and strange invocations. The priest assumes the character of a god, and gives answers from Tabra, as to what times and seasons will be propitious; and, for this intelligence, every fisherman presents him with an acknowledgment proportioned to his ability.

FEUDAL SYSTEM. [The following article relates more particularly to Germany, where this system originated and received its fullest development; but the account is, in all important particulars, applicable to the other parts of Europe where this system prevailed.] A fee, feud, or fiief is a possession, of which the vassal receives the right of use and enjoyment, of disposition and alienation, on condition of fidelity (that is, of affording assistance or counsel, and avoiding all injurious acts), together with the performance of certain services incident to that tenure, which are known, respectively, as the fiief or the mount right (dominium directum). A feif is distinguished from alodial possessions by the circumstance, that it cannot be alienated without the consent of the feudal lord, by the services usually due from the vassal, and by a peculiar kind of inheritance. The nature of feudal property is explained by its origin. Such was the possession of the ancient Roman army for war, that, in time of peace, private feuds took the place of public contention; and, in default of these, the men of military age spent weeks, and months, and years, in adventures, and made incursions into the territory of the neighbouring tribes, or took part in the quarrels of the distant ones. On these expeditions, the experienced and powerful were usually attended by a number of equally valiant youths, who were furnished by the chief with provisions, and, perhaps, with arms, and composed his retinue or following (Latin, comitatus). This retinue, which was well known in the time of Caesar and Tacitus, was bound to the commander by finer ties than the transient love of war or inconsistent success. If the leader did not prove false (which was never known), the attendant devoted his whole life to his service, and was always ready to meet the summons to new adventures. And when the whole nation marched to war, the warriors formed about their chief a devoted band, ready to sacrifice themselves for his safety. Each of them looked upon the life and liberty of his leader as intrusted to his own peculiar care; and, if any one survived his imprisonment or death, he was for ever banded as a coward. The general of the national militia (heerbanri), always one of the wealthiest landholders, had a crowd of them constantly about his person. These companions (in German, Gesellen, whence the later barbarous Latin word vasalatius) received no pay except their arms, horses, and provisions, and the portion of the spoils which remained after the chief had taken his share of the experiences of the three years' wars against the adjacent tribes, or the Roman provinces, their booty consisted of garments, arms, furniture, slaves. But when the northern hordes broke in to the south, and, in the partition of the conquered lands, large districts fell into the hands of kings or dukes and their subordinates, they gave certain portions of the territory to their attendants, to enjoy the possession for life. These estates were called beneficia, or fiiefs, because they were only lent to their possessors, to revert after their death to the grantor, who immediately gave them to another of his servants. From this custom of the ancient Germans arose the feudal system, and feudal service, which is purely German. As the son commonly esteemed it his duty, or was forced by necessity, to devote his arm to the lord in whose service his father had lived, he also received his father's fiief; or, rather, he was invested with it by his father. By the custom called the verba ipsum, a vassal became a right; and to deprive one of his paternal fiief, though it was prohibited by no law, seemed an act of injustice. At length, express provision was made by Conrad II., in Germany, in the year 1025, and in Italy in 1037 (or perhaps in 1028), by which the feudal concessions of a father were forbidden to descend to his son (female fiiefs are later deviations from the system), or those of clergymen to their successors. In that period of lawless violence,
which followed the migration of nations, and the death of Charlemagne, it soon appeared useful and indis- pensable that those states which were well protected from foreign invasion, though they had no assurance of internal security, should put their protection under the patronage of a powerful governor. Powerful barons and rich bishops on one side, dukes and counts, the representatives of the kings, on the other, oppressed the neighbouring free proprietors of landed property, till they looked with jealousy on the dependent vas- sals, and submitted to the protection of the oppre- sors or some other noblemen in order to obtain security. Many persons, especially the poor, who were obliged to cultivate their land themselves, and could not leave it without much inconvenience, submitted to this protection, though they were in no danger of oppression, merely to escape the military service. For dukes, and counts, and the barons (who acted on behalf of the bishops), whose duty it was to levy and command the army, instead of employ- ing the raw militiamen, who often forgot their mili- tary skill in long-continued peace, preferred their own attendants, now styled the vanquished, and released such nobles as were willing to become their vassals, and pay a certain contribution, from the obligation of serving in the national militia. The emperors and kings cared little from what source the dukes obtained their forces, provided the number was complete. Besides the advantages just mentioned, they even preferred an army of vassals to the na- tional soldiery, because the latter were bound only to serve in the defence of the country, while the former were bound to a much less limited, sometimes uncon- ditional service, and were hence far more useful. Thus the national militia gradually went out of use, and gave place to the feudal militia. Another, and not a small advantage, in addition to that, was that the wealthy families, after wards called the inferior nobility, who cul- tivated their land by means of hirelings or bondsmen, were not anxious to free themselves from the military service; for war was always their favourite employ- ment. But they could not dispense with the pro- tection of the nobles; on the other hand, their pride could not stoop to serve in an army which was every day sinking into disgrace. They longed for the honour of being received among the vassals of the nobility, and consented to hold their estates as the feudalities of the nearest duke, or earl, or bishop. Often, too, from a feeling of devotion, they became the feudatories of the great religious establishments. In Germany at the present day, with the ex- ception of the north-eastern provinces, formerly Schla- vonic, and subsequently conquered and divided among vassals. They were bound, like other vassals, under the penalty of losing their lands, to follow their lord in all his quarrels against any person excepting other lords of whom they held lands, and excepting also the emperor and empire. Moreover, in war, the vassals were required to throw open their fortresses and castles for the use of their masters. The dukes, and counts, and bishops, who were paid in fiefs for their services, stood in the same relation to the emperor; and inferior landed proprietors stood also in the same relation to the superior nobility (for this was the origin of the inferior nobility). Rich and adventurous peasants, likewise, who preferred honourable vassalage to honest but despised pastra- nage, invested some nobleman with their lands, or were willing to live with the assistance of the lord paramount, with a further portion of his feudal terri- tory (under tenants). The investiture was made, from the time of the Saxon emperors, in the great vice-regal fiefs, by a banner (which was the ensign of command); in the inferior ones by a sword; and in

the spiritual fiefs, by a ring and a staff; after the peace of Worms, in 1122, which confined the power of the emperor to secular affairs, by a sceptre. The castle fiefs, so called, were a peculiar kind of military fiefs, those possessions which were bound to defend the castle belonging to his lord. The protection of the defence was called, in the imperial fortresses, a burggrawe. Thus the several orders of vassals formed a system of concentric circles, of which each was under the influence of the next, and all moved around a common centre, the king, as the supreme feudal lord.

With military vassals another class arose. From the oldest times, we find in the courts of kings, and the governors whom they appointed, as well as in those of the bishops, certain officers, who at first per- formed active service, but were afterwards rather a splendid appendage to the court. The four offices of the marshal, the chamberlain, the cupbearer, and the sewer, are the oldest and most honourable, but by no means the only ones: offices, on the contrary, were as numerous as the employments which could be devised at court. These officers, at a period when money was scarce, and the old German custom in full vigour, each considered the landed proprietors as citizens, and none but the owners of large estates as noblemen, were naturally rewarded by grants of land during the time of service; and these estates, like the military fiefs (but somewhat later, cer- tainly not before the time of Frederic I.), became by degrees hereditary. The splendour of the court, and the advantages accruing from these services, induced many noblemen to solicit them. They became the first in the new class of servants or ministers which was thus formed; and under them there was a mul- titude of other servants, particularly on the estates of the nobility. Every farmer (mittelherren) was paid for the cultivation of one piece of land by the investiture of another smaller piece; and there was scarcely a servant of the court who had not been invested, for his services, with at least a house or a garden in the village adjoining the castle. The great ministerial officers, too indulgent to execute the duties of their estates themselves, with the permission of their lords, soon began to commit them to others, whom they paid in like manner for their administration by the investiture of some other estates. Fiefs were gradu- ally introduced, which were acquired not by military or court services, but by performing certain duties of no great difficulty, amounting to a kind of feudal service, as the acknowledgement of the lord's feudal superiority; as by the yearly gift of a horse, a pair of homards, a falcon, or the like. Very slight acts were often admitted as acknowledgments, as the holding of a stirrup, or walking before the feudal lord on certain occasions. Among the presents and acts are some of a most ridiculous character, according to the humour of the feudal lord; such as dancing before the army, performing some trick, offering an egg, a peaey, &c. A refusal to perform feudal service, or any other violation of fealty, was styled felon y (q. v.). Upon this and other difficulties incident to feudal property, the assessor of the great lord, in the succession, surrender, alienation, or under-tenure of a fief, the lord decided in a feudal court, filled by vassals, who were required to be of equal rank with the accused. To appear in these courts at the summons of the lord of the manor, and accept the place of an assessor there, was reckoned among the most honourable of a fief. All this is one of the most important relations in life) became more and more widely spread, and the number of vassals increased at the expense of the ancient im- mediate subjects of the empire, the latter were thrown into the background, and at length nearly forgotten.
In the tenth and eleventh centuries, no duty due from subjects was known, except feudal duties; the whole German empire was one vast feudal possession, and the ideas of feudal lords and national sovereigns were wholly unknown (as the title of king was known to be feudal) nor a vassal, he was scarcely looked upon as a citizen, and no one took care for his safety. Hence few rich landed proprietors ventured to rely upon their own strength, without a feudal connexion. And even most of these at last yielded to the spirit of the age, and became royal vassals (as the title of prince was taken.) The emperor, likewise, used every means to induce them to adopt such a course. Thus, when the haughty baron of Krenzingen, who was the vassal of no one, refused to do homage to Frederic I., the enraged monarch invested him with the right of coinage, that he might become his lord. On the other hand, it was considered the duty of the German emperor not to extinguish a fief which reverted to the sovereign for want of heirs to inherit it, but to infold some other, a productive capital, on the account of the property (only on the pleasure of the monarch), and thus to secure the continuance of the feudal system, on which the continuance of the empire seemed to depend; for a reversion of fiefs to the emperor would bring into his hands an excess of power; and a release of the princes from their feudal ties would be followed by a state of anarchy. Besides, the necessary connexion of all the offices with the fiefs rendered the line of separation between them very indistinct; and the service which was paid for a fief was regarded as the fief itself; so that persons were no longer invested with estates as the reward of office, but with the office, as a productive capital, on the account of the property attached to it. The dukes, bishops, bailiffs, and burgomasters, sometimes from ignorance, and sometimes from interested motives, increased this confusion. They made no difference between their fiefs and the districts and castles for the government of which they were given to them. They exercised in these places, which were filled mostly by their own vassals, the power of feudal landlords, and esteemed any attempt to curtail their rule as an act of flagrant injustice, equivalent to a withdrawal of the fief. In the provinces where the ducal power was early abolished, as in Francia, Suabia, and Westphalia, the counts and abbeys were not national princes, but were founded in Bavaria, Thuringia, Austria, and Brandenburg, often wholly forgetful of their dignity as imperial governors, they sank into the state of mere vassals to the dukes, landgraves, and margraves, and were hardly able to maintain their under-tenures in a state of dependence.

From the feudal system, the only social organization of the European states in the middle ages, a new system of civil rank arose. The inferior nobility, a rank intermediate between the higher nobility (princes and freemen, owes its origin, it is said, to this institution; and a regular scale of rank was formed among the vassals, without detriment, however, to the principle of feudal rights. The lowest class were the spiritual princes, bishops, and immediate abbots constituted the second; the lay princes, dukes, landgraves, margraves, and immediate counts, the third; those barons, or rich landed proprietors, who owed fealty to no one, but yet, on account of their limited rights, were not considered as subjects of the empire of the fourth; those freemen who stood in the same relation to the princes, the fifth; the vassals of the former and the servants of the princes, the sixth; and the possessors of small fiefs, the seventh. This arrangement corresponds to the Italian division into principes, capitani, vacalli, magnates, baroni, escuderos, marqueses, minores, and soldati; the English into lords, esquires, and freeholders; the Spanish grandes (ricos hombres, rich men), escuderos, hidalgos; and the French pairs, barons, ecuyers, and valets de chambre. The title ecuyer, escudero, esquire, however, belongs rather to clerical than to lay ranks. Besides, in some centuries, the order of citizens was formed, as being included under no one of them. The spirit of the feudal system, grounded on the prevalence of landed property, was necessarily foreign to cities, which owed their origin to industry and personal property, and depended on a new sort of nobility. Hence we see them almost always involved in open hostilities and contests with the nobility.

The principles of the feudal laws (the name given to the system of rights and obligations existing between feudal lords and vassals) were developed and established by the Lombard lawyers of the twelfth century. The collection of feudal laws and customs, which is appended to the Roman code under the title of libri feudorum (fiefs are called feuda, in opposition to alodio, originally, estates gained by lot; feudum is from the ancient fe, a reward, and odo, a possession,) and which has become the feudal law in many other respects, was written in a new sort of language. Hence we see them almost always involved in open hostilities and contests with the nobility.

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The feudal government, at a period when a spirit of independence and of opposition to despotism was abroad in the land, was well suited to put into the hands of one governor, as supreme feudal lord, the reins of the national power, to be employed against foreign enemies without endangering domestic freedom. But as every human institution bears in itself the germ of decay, the purity and influence of feudal relations was diminished; and the strength of the national government declined amidst a spirit of disaffection and sedition, which became universal, when nobles began to perceive that the feudal government no longer served their own interests.

Indeed, the sovereigns had no other security for their subjection than the feudal oath, and the menace of punishment, which the king had not the ability to carry into effect, as his power was divided in most of his states, either by investiture or by the usurpations of the princes. Thus the vassals of the crown in Germany, Italy, and the oldest districts of France, succeeded in depriving the king of almost all power, even of the external honour of royalty; and never, in the two first countries, and in France only after the extinction of the great baronial families, could he succeed in establishing a new authority, independent of the feudal party. As the improvements in the art of war had brought about a total change in modern times, and the feudal militia had been entirely superseded by the standing armies, the feudal government had no means of retaining its authority, but by the feudal service, of insuring an executive force. Even the military of the past, too useless and inconvenient, and too much opposed to the principles of the modern laws of equality to be any longer maintained. Feudal service is no longer demanded, because it has ceased to be useful. It has been, and still is, the great task of the present age in Europe, to conquer the feudal system—a system of things which grew out of times of
barbarity and disorder, and rested on principles and circumstances which no longer exist. Yet there are, particularly among the Germans, visionary men, who, seduced by the glowing descriptions of old ballads, or the fine poetry of a writer, tell their disciples that the febrile times were the very model of an age of honour and religion. It is well for them that they cannot test the truth of their opinions by their own experience.

FEUILLANS, in ecclesiastical history; an order of religious men, in white robes and going barefoot, who live under the strict observance of the rule of St. Bernard. The name was occasioned by a reform of the order of Bernardins, first made in the abbey of Feuillans, near Toulouse, established in 1580. There are also convents of nuns who follow the same reform, called Feuillantes. The first of them was established near Toulouse in 1690.

FEVER; a disease characterized by an increase of heat, an accelerated pulse, a foul tongue, and an impaired state of several functions of the body. The varieties are numerous. The principal divisions are into continued and intermittent fevers. Continued fevers. The details of the abort exacerabions come on usually twice in one day. Intermittent fevers are known by cold, hot, and sweating stages, in succession, attending each paroxysm, and followed by an intermission or remission. There are three genera of intermitting fevers, and several varieties: 1. Quoitidiana; a quoitidian ague. The paroxysms return in the morning, at an interval of about twenty-four hours. 2. Tertiana; a tertian ague. The paroxysms commonly come on at midnight, at an interval of about forty-eight hours. 3. Quartana; a quartan ague. The paroxysms come on in the afternoon, with an interval of about seventy-two hours. The tertian ague is most apt to prevail in the spring, and the quartan in autumn. When these fevers arise in the spring, they are called vernal; and when in the autumn, they are known by the name of autumnal.

Intermittents often prove obstinate, and are of long duration in warm climates; and they not unfrequently resist every mode of cure, so as to become very distressing to the patient, and, by the extreme debility which they thereby induce, often give rise to other chronic complaints. It seems to be pretty generally acknowledged, that marsh miasmas, or the effluvia arising from stagnant water, or marshy ground, are of much use as the most frequent exciting cause of this fever. A watery, poor diet, great fatigue, long watching, grief, much anxiety, exposure to cold, lying in damp rooms or beds, wearing damp linen, the suppression of some long accustomed evacuation, or the reception of excretions, have been ranked among the exciting causes of intermittents; but it is more reasonable to suppose that these circumstances act only by inducing that state of the body which predisposes to these complaints. One peculiarity of this fever is its great susceptibility of a renewal from very slight causes, as from the prevalence of an easterly wind, even without the repetition of the usual exciting cause. In this circumstance, intermittents differ from most other fevers, as it is well known that, after a continued fever has once occurred, and been removed, the person so affected is by no means so liable to a fresh attack of the disorder, as one in whom it had never taken place.

We have not yet attained a certain knowledge of the proximate cause of an intermittent fever, but a deranged state of the stomach and prime vies is that which is most generally alleged. Each paroxysm of an intermittent fever is divided into three different stages, which are called the cold, the hot, and the sweating stages, or fits. The cold stage commences with languor, a sense of debility and sluggishness in motion, frequent yawning and stretching, and an aversion to food. The face and extremities become pale, the feverish drank, the bulk of every external part is diminished, and the skin of the body appears constricted, as if cold had been applied to it. At length the patient feels very cold, and universal rigors come on, with pains in the head, back, loins, and joints, nausea, and vomiting of bilious matter; the respiration is small, frequent, and anxious; the urine is white, colourless; sensibility is greatly impaired; the thoughts are somewhat confused; and the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed in so high a degree as to resemble coma or apoplexy; but this is by no means usual. These symptoms abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety, and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse becomes regular, hard, and strong. If the fever has been continued, then perhaps delirium will arise. When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this, at length, extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, and most of the functions are restored to their ordinary state. This constitutes the third stage. When intermittents continue for any length of time, they are apt to induce other complaints, such as a loss of appetite, flatulency, scorbutus of the liver, dropsical swellings, and general debility, which, in the end, and then prove fatal, particularly in warm climates; and, in some cases, they degenerate into continued fevers. Relapses are very common to this fever at the distance of five or six months, or even a year. Autumnal intermittents are more difficult to remove than vernal ones, and quarts more so than the other types.

It is always desirable to suspend a paroxysm, if possible, not only to prevent mischief, but also that there may be more time for the use of the most effectual remedies. When, therefore, a fit is commencing, or shortly expected, we may try to obviate it by some of those means which excite movements of an opposite nature, and in this respect we hope to answer the purpose, determining the blood powerfully to the surface of the body; or a full dose of opium, assisted by the pediluvium, &c.; either also, and various stimulant remedies, will often succeed; but these may perhaps aggravate, should they not prevent the fit; the cold bath, violent exercise, strong impressions on the mind, &c., have likewise been occasionally employed with effect. Should the paroxysm have already come on, and the cold stage be very severe, the warm bath, and cordial diaphoretics in repeated moderate doses, may assist in bringing warmth to the surface; when, on the contrary, great heat is the prevailing symptom, the plan is to be pursued. In the intermissions, in conjunction with a generous diet, moderate exercise, and other means calculated to improve the vigour of the system, tonics are the remedies especially relied upon. At the head of these we must certainly place the cimicaria, which, taken internally in substances, will seldom fail to cure the disease, where it is not complicated with visceral affection.
paired. This fever is so named from its being attended with symptoms denoting general inflammatory action of the system, by which we shall always be able readily to distinguish it from nervous or putrid. It makes its attack at all seasons of the year, but is most prevalent in the spring; and it affects persons of all ages and habits, but more particularly those in the vigour of life, with strong elastic tissues, and a peculiar type of a plethoric constitution. It is a species of fever almost peculiar to cold and temperate climates, being rarely, if ever, met with in very warm climates, except among foreigners lately arrived; and even then, the inflammatory stage is of very short duration, as it very soon assumes either the nervous or putrid type. The exciting causes are sudden transitions from heat to cold, swallowing cold liquors when the body is much heated by exercise, too free a use of vinous and spirituous liquors, gross intemperance, violent passions of the mind, the sudden suppression of habitual evacuations, and the sudden expulsion of eruptions. It may be doubted if this fever ever originates from personal infection; but it is possible for it to appear as an epidemic among such as are of a robust habit, from a peculiar state of the atmosphere. It comes on with a sense of languid and inactivity, succeeded by vertigo, rigors, and putrid tenacity of the body, but more particularly in the head and back, which are shortly followed by redness of the face and eyes, great restlessness, intense heat, and unquenchable thirst, oppression of breathing, and nausea. The skin is dry and parched; the tongue is of a scarlet colour at the sides, and furred with white in the centre; the urine is red and scented; the body is costive; and there is a quickness, with a fulness and hardness in the pulse, not much affected by any pressure made on the artery. If the febrile symptoms run very high, and proper means are not used at an early period, stupor and delirium come on, the imagination becomes much disturbed and hurried, and the patient raves violently. The disease usually goes through its course in about fourteen days, and terminates in a crisis, either by diaphoresis, diarrhoea, haemorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis is usually preceded by some discharges,排出, vomits, offensive; and urine contains a black putrid sediment; the stools are dark, offensive, and pass off insensibly; hemorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots or petechia appear on its surface; the pulse internists and sinks; the extremities grow cold; hicoughs and sneezing; and death at last closes the scene. When this fever does not terminate fatally, it generally begins, in cold climates, to diminish about the commencement of the third week, and goes off gradually towards the end of the fourth, without any very evident crisis; but in warm climates, it seldom continues above a week or ten days, if so long. Our opinion, as to the event, is to be formed by the degree of violence in the symptoms, particularly after petechia appear, although in some instances recoveries have been effected under the most unpromising appearances. An abatement of febrile heat and thirst, a gentle moist heat, and equal freedom of access of the fluids to the putrefaction, and the ordinary symptoms of fever. It is to be readily distinguished from the inflammatory by the smallness of the pulse, and the sudden and great debility which ensues on its first attack, and, in its more advanced stage, by the petechiae, or small red spots which come out in various parts of the body, and the feint stools which are discharged; and it may be distinguished from the nervous fever by the great violence of all its symptoms on its first coming on. The most general cause that gives rise to this disease is contagion, applied either immediately from the body of the patient, either under it, or conveyed in clothes or merchandise, &c.; but it may be occasioned by the effluvia arising from either animal or vegetable substances, in a decayed or putrid state; and hence, in low and marshy countries, it is apt to be prevalent when intense and sultry heat quickly succeeds any great inundation. A want of proper cleanliness and confined air are likewise causes of this fever; hence it prevails in hospitals, jails, camps, and on board of ships, especially when such places are much crowded, and the strictest attention is not paid to a free ventilation and due cleanliness. A close state of the atmosphere, with dump weather, is likewise apt to give rise to putrid fever. Those of lax fibres, and who have been weakened by any previous debilitating cause, such as poor diet, long fasting, hard labour, continued want of sleep, &c., are most liable to it. On the first coming of the fever, or the disease is called to throbbing violently, the tongue is dry and parched, respiration is commonly laborious, and interrupted with deep sighing; the breath is hot and offensive, the urine is crude and pale, the body is costive, and the pulse is usually quick, small and hard, and now and then fluttering and unequal. Sometimes a great heat, loaded, and pain are felt at the pit of the stomach, and a vomiting of bilious matter ensues. As the disease advances, the pulse increases in frequency (beating often from 100 to 130 in a minute); there is vast debility, a great heat and dryness in the skin, oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth are covered with a brown or black tenacious fur; the speech is inarticulate and scarcely intelligible; the patient mutters much, and delirium ensues. The fever continuing to increase still more in violence, symptoms of putrefaction show themselves; the breath becomes highly offensive; the urine contains a black putrid sediment; the stools are dark, offensive, and pass off insensibly; hemorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots or petechia appear on its surface; the pulse internists and sinks; the extremities grow cold; hicoughs and sneezing; and death at last closes the scene. 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rhages, and hiccoughs denote the almost certain dissolution of the patient. The appearances usually perceived on dissection are inflammations of the brain and viscera, but more particularly of the stomach and intestines, which are now and then found in a greatly gangrenous state. In the muscular fibres there seems likewise a strong tendency to gangrene. In the very early period of typhus fever, it is often possible, by active treatment, to cut short the disease at once; but where it has established itself more firmly, we can only employ palliative measures to diminish its violence, that it may run safely through its course.

Among the most likely means of accomplishing the first object is an emetic. Attention should next be paid to clear out the bowels by some sufficiently active form of medicine; and as the disease proceeds, we must keep up this function, and attempt to restore that of the skin, and the other secretions, as the best means of moderating the violence of vascular action. The general antiphlogistic regimen is to be observed in the early part of the disease, as explained under synocha. In cases where the skin is uniformly very hot and dry, the abstraction of caloric may be more actively made by means of the cold application, to the chin and arms and legs, on the naked body of the patient; which measure has sometimes arrested the disease in its first stage; and, when the power of the system is less, sponging the body occasionally with cold water, medicated, perhaps, with a little salt or vinegar, may be substituted as a milder proceeding. But, where the evolvement of heat is even deficient, such means would be highly improper; and it may be sometimes advisable to employ the tepid bath, to promote the operation of the diaphoretic medicines. If, under the use of the measures already detailed, calculated to lessen the violence of vascular action, the vital powers should appear materially falling off, recourse must then be had to a more nutritious diet, with a moderate quantity of wine, and cordial or tonic medicines.

There is generally an aversion from animal food, whence the maculigious vegetable substances, as arrow-root, &c., rendered palatable by spice or a little wine, or sometimes mixed with milk, may be allowed in sufficient quantity to satisfy the appetite.

If, however, there be no marked septic tendency, and the patient be cloyed with these articles, the lighter animal preparations, as calves-foot jelly, veal-broth, &c., may be allowed. The extent to which wine may be carried must depend on the urgency of the case; but generally half a pint in the day is enough. If it will, however, it is commonly not necessary to exceed half a pint, or a pint at most, in the twenty-four hours; and it should be given in divided portions, properly diluted, made, perhaps, into negus, whey, &c., according to the liking of the patient. The preference should always be given to that which is of the soundest quality, if affordable; but where wine can not be afforded, good malt liquor, or mustard whey, may be substituted. Some moderately stimulant medicines, as ammonia, aromatics, serpentinaria, &c., may often be used with advantage, to assist in keeping up the circulation; also those of a tonic quality, as columbia, cusparia, cinchona, &c., occasionally in their lighter forms; but more especially the acids. These are in several respects useful: by promoting the secretions of the prime vae, &c., they quench thirst, remove irritation, and manifestly cool the body; and in the worst forms of typhus, where the pyretic tendency appears, they are particularly valuable. They are usually employed in forms more or less decidedly tonic, and, indeed, these from the mineral kingdom powerfully so. These may be given freely as medicines, the carbonic acid also in the form of brisk fermenting liquors; and the native vegetable acids, as they exist in ripe fruits, being generally very grateful, may constitute a considerable part of the diet. In the mean time, to obviate the septic tendency, great attention should be paid to cleanliness; not only of the person, and keeping the bowels regular by mild aperients, or enemas, to prevent antiseptic nature; and where aphthae appear, acidulated gargles should be directed. If the disease inclines more to the nervous form, with much mental anxiety, tremors, and other irregular affections of the muscles, or organs of sense, the antipsammic medicines may be employed, under feverish stage, as ether, camphor, musk, &c., but particularly opium, which should be given in a full dose, sufficient to procure sleep, provided there be no appearances of determination of blood to the head; and it may be useful to call a greater portion of nervous energy to the lower extremities by the pediluvium, or other mode of applying warmth, or occasionally by simpsams, not allowing these to produce vesication. But if there should be much increased vascular action in the brain, more active means will be required; even the local abstraction of blood, if the strength will permit; and it will be always right to have the head snuggly covered with a cold wet bandage, and lotion, and a blister applied to the back of the neck. In like manner, other important parts may occasionally require local means of relief. Urgent vomiting may, perhaps, be checked by the effervescing mixture; a troublesome diarrhoea by small doses of opium, assisted by aromatics, charlock, and other astringents, or sometimes by small doses of ipecacuanha; profuse perspirations by the infusion rosa, a cooling regimen, &c.

Nervous Fever; a variety of the typhus mitior of Cullen, but by many considered as a distinct disease. It mostly begins with loss of appetite, increased heat, and vertigo; to which succeed nausea, vomiting, great languor, and pain in the head, which is variously described, by some like cold water pouring over the top; by others, a sense of weight. The pulse, before little increased, now becomes quick, febrile, and tremulous; the tongue is covered with a white crust, and there is great anxiety about the heart, accompanied by paroxysms of palpitation and vertigo, increased, and tinnitus aurium, cephosph, delirium, and a dry and tremulous tongue take place. The disease mostly terminates about the fourteenth or twentieth day. See Typhus.

Dengue Fever. This name has been given to a disease which prevails in the Indies, and in the Southern States of North America. It has also been called the dinge, the danga, the dandy, the bouquet, and the bucket fever. This disease was remarkable for the suddenness of its attack, the great numbers affected, the severity of the symptoms, and the rapidness of death from it. It would seem, from the reports of those who have seen most of this disease, and whose judgment may be relied on, that the dengue has some affinities with the yellow fever. The symptoms, as noticed in Havana, were first great languor, chilliness, and pain in the tendons of the smaller joints; following these were burning redness and redness of the skin, pains in the muscles of the limbs, or pain in the forehead, and a loathing or vomiting of whatever was taken into the stomach. The fever continued for one, two, or three days, and then usually terminated with a free sweating, which freed the patient likewise from his distress. But many, if not most, they are at the commencement recovered by a renewal of their pains, which, in some, have become chronic; others have also had a renewed attack of the fever. "The most usual mode of attack, however," says Dr Stechman, of Santa Cruz, "which
appears not a little singular, was the following: A person in perfect health would suddenly feel a stiffness, amounting almost to pain, in one of his fingers, and most frequently his little finger. The stiffness increased, and was accompanied with an intense degree of pain, which spread rapidly over the whole hand, and up the arm into the shoulder. The fingers in a few hours bulged, became extremely stiff, and painful, preventing all attempts at bending the joints. To this succeeded restlessness, depression of spirits, nausea, vomiting, shivering, great heat, intense headache, most acute pain in every joint. The most distressing symptoms were intense pain in the eye balls and back, the eyes seeming to the patient enlarged, full of tears, and as if ready to burst. Quite a remarkable symptom was the feeling of intense cold, while, at the same time, the skin was intensely hot. These symptoms continued from twenty-four to thirty-six hours. The patient now remained languid, irritable, and restless for about three days, when it was not uncommon for a new attack to come on, accompanied by an efflorescence, beginning at the palms of the hands, and extending thence over the whole body. Secondary symptoms, consisting principally in pain and stiffness of the limbs and body, followed, which, in many cases, kept the patient most uncomfortable. Sometimes there was distressing itching; and, in some cases, there was swelling of the prepuce and scrotum, and, in others, a discharge from the urethra, resembling gonorrhoea. Dr Stedman considers the disease contagious. The treatment was, for the most part, antiphlogistic. Such means were used as would hasten the sweating stage, evacuate the bowels, and render the patient most comfortable. Where these means failed, the more active depleting means were resorted to, and much relief of local suffering was afforded by the use of blisters and stimulating emulsions, mustard poultices, and the like. The latter were applied to the temples, to relieve the pain in the eyeballs, to the back, the back of the neck, &c., as indicated, and always with advantage. Dr Stedman found benefit from blood-letting in some severe cases. See various accounts of this epidemic by Drs Dickson, Dickson, and Warr, &c. &c. in the American Journal of Medical Sciences.

Synochus (from evosyu, to continue): a mixed fever; a species of continued fever, commencing with symptoms of synocha, and terminating in typhus, the former being apt to preponderate at its commencement, and the latter towards its termination. Everything which has a tendency to curate the body may be looked upon as a remote cause of this fever; and, accordingly, we find it often arising from great bodily fatigue, too great an indulgence in sensual pleasures, violent exertions, intemperance in drinking, and errors in diet, and now and then likewise from the use of hot and the application of cold, or from an accomstomed discharge. Certain passions of the mind (such as grief, fear, anxiety, and joy,) have been enumerated among the causes of fever, and, in a few instances, it is probable they may have given rise to it, but the concurrence of some other powers seems generally necessary to produce this effect. The most usual and universal cause of this fever is the application of cold to the body; as, for instance, when the body is deprived of a part of its accustomed clothing, or a particular part is exposed while the rest is kept at its usual warmth, or a sudden and general exposure to cold takes place when the body is heated much above its usual temperature. Another frequent cause of fever seems to be breathing air contaminated by the vapours arising either directly or originally from the body of a person labouring under the disease. A peculiar matter is supposed to generate in the body of a person affected with fever, and this, floating in the atmosphere, and being applied to one in health, will, no doubt, often cause fever to take place in him; which has induced many to suppose, that this infectious matter is produced in all fevers whatever, and that they are all more or less contagious. The effluvia arising from the human frame in fever, confined to one person, without being diffused in the atmosphere, will, it is well known, acquire a singular virulence, and will, if applied to the bodies of men, become the cause of fever. Exhalations, arising from animal or vegetable substances in a state of putrefaction, have been looked upon as another general cause of fever, especially upon the grounds, acted upon by heat for any length of time usually send forth exhalations, which prove a never-failing source of fever, particularly in warm climates. An attack of this fever is generally marked by the patient's being seized with a considerable degree of languor or sense of debility, together with a sluggishness in motion, and frequent yawning and stretching; the face and extremities at the same time become pale, and the skin over the whole surface of the body appears constricted; he then perceives a sensation of cold in his back, passing from thence to his head; and this feeling seems to increase, tremors in the limbs and rigors of the body succeed. With these there is a loss of appetite, want of taste in the mouth, slight pains in the head, back, and loins, and small and frequent respirations. The sense of cold and its effects, after a little time, become less violent, and are alternated with flushings; and at last, going off altogether, they are succeeded by great heat diffused generally over the whole body; the face looks flushed, the skin is dry, as likewise the tongue; universal restlessness prevails, with a violent pain in the head, oppression at the chest, sickness at the stomach, and an inclination to vomit. There is likewise a great thirst and costiveness, and the pulse is full and frequent, beating, perhaps, 90 or 100 strokes in a minute. When the symptoms run very high, and there is a considerable determination of blood to the head, a delirium will arise. In this fever, as well as most others, there is general increase of circulatory action in the evening. As a fever once produced will go on, although its cause be entirely removed, and as the continued or fresh application of a cause of fever will neither increase that which is already produced, nor occasion a new one, there can be no certainty as to the duration of fever; and it is only by attending to certain appearances or changes which usually take place on the approach of a crisis, that we can form any opinion or decision. The symptoms pointing out the approach of a crisis, are, the pulse becoming soft, moderate, and near its natural speed; the tongue losing its fur, and becoming clean, with an atabatic irregular agitated motion, with a gentle moisture, and feeling soft to the touch; the secretory organs performing their several offices; and the urine depositing flaky crystals of a dirty red colour, and becoming turbid on being allowed to stand any time. A simple continued fever terminates always by a regular crisis in the manner before mentioned, or, from the febrile matter falling on some particular parts, it excites inflammation, abscess, eruption, or destroys the patient. This disease being of a mixed nature, the treatment must be modified accordingly. In the beginning, the same plan is to be pursued as in synocha, except that we must be more sparing in the use of the lancet, in proportion as there is less power in the system to maintain the increased action of the heart and arteries; although, if any important part should be much
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Fever is one of specific character, and confined to situations in which great moisture is joined with great heat. It prevails in the West Indies, certain parts of Asia, South America, occasionally in the northern parts of North America, and pretty constantly in the southern. It is endemic in many portions of the globe, and especially in the tropic climates, and is occasionally epidemic in certain of the higher northern latitudes, as at Baltimore, Philadelphia, and New York. It is most common in seaports, and on large bodies of water, but is occasionally found in inland situations. It differs materially from the endemic remittent of tropical climates, and is, of course, not merely an excited form of the bilious remittent of such places. It differs from the endemic remittent of the West Indies, in its attacking strangers to such climates only. The natives, and even such as have been born or lived long in similar situations, are altogether exempt from its attacks; and, should the stranger escape the dangers of yellow fever, he remains free, for the most part, subsequently, though not exempt from the endemic remittent of the place. This immunity, however, may be forfeited by the stranger living for a year or two in a northern latitude: should the stranger escape for a year or two, he becomes acclimated, and is no longer liable to be attacked by yellow fever. This disease has been looked upon, by some, as contagious; but this notion is now altogether abandoned by far the greater part of the profession; and especially such as have had opportunities to observe its phenomena, and ascertain its habits for themselves. That it spreads rapidly sometimes, is admitted; but this is owing to the causes which make it an epidemic, and not to any contagious quality. This disease varies in its mode of attack, as well as in the violence of its symptoms. In almost every other febrile disease, as a general rule, the risk is in proportion to the violence of the symptoms; but in a form of bilious fever, is most commonly the most difficult of management, and, consequently, the most dangerous. Hence the "walking cases" are almost sure to prove fatal. There are three modes of attack in yellow fever; and the phenomena of either may vary, as the remote cause may have been more or less active or concentrated. They may also be influenced by individual habits or constitutions, or by the force of the occasional or exciting cause; and hence we find it run its course rapidly sometimes; that is, from two to five days, a part of the cases terminating in black vomit. In this form of the disorder, the symptoms are generally less florid, and less distinctly marked, though more certain and quickly fatal; or it may run on to the fifth or to the seventh day; and though the sufferings are of a more acute kind, the danger is less, as more time is given for the application of remedies; or it may present, like a regularly formed remittent, regular exacerbations and remissions. If it assume this form, it may run on to the ninth or eleventh day. The first form observes no very regular period of attack, though the evening is the most common. The second generally takes place after noon; and the third, most frequently in the morning. The mode of attack, however, is generally more certainly marked by the suddenness of its setting in. Some of the symptoms, differing so much in force, or character, in fact, except the first, which often has the peculiarity of betraying itself by scarcely any outward signs, except weakness, slight headache, or nausea. This insidious character lulls the patient and his friends to a fatal security. The patient has been known to walk about until within a few minutes of dissolution. The unmasked or violent attack of yellow fever is, therefore, less to be dreaded than the seemingly milder form of the derangement of the system is more palpable, though it is always exceedingly dangerous. This disease differs in its attack from almost every other form of fever, as it is seldom ushered in by a well-defined chill, though the sensation of cold, and a reduced temperature of the skin, will remain sometimes a long time before reaction will take place. Much labor is always expected, and in the most part, intense headache, distress about the precordia, and the eyes are of a peculiar red. The heat of the skin is seldom great in the beginning, but soon increases in intensity, conveying to the mind the sensation of pungency. The pulse is rarely open and strong; indeed, it usually appears rather more feeble than natural to the inexperienced practitioner, which sometimes betrays him into dangerous errors. The pulse in this state is termed the oppressed or depressed pulse by authors; and, instead of requiring the aid of stimulants, as has been too often supposed, calls loudly for the proper use of the lanceet. The face assumes a certain color, and a peculiar lividity, which is totally distinct from the redness of ordinary fever. This reddening gives a very marked character to the countenance, and can never be mistaken, by any eye experienced in this disease, for a symptom of common fever: on the contrary, it always denotes a high degree of yellow fever. The tongue is usually moist and clammy; but rarely dry, rough, or red, in the commencement, though these conditions of this organ are sure to follow in a short time. This is dry and harsh, for the most part; though occasionally it is found wet, with hot perspiration. This sweat is sometimes early in its appearance, and, at times, extremely profuse in its quantity; but it neither abates the action of the heart and arteries, nor mitigates the local sufferings,—as headache, pains in the limbs, or oppression in the lungs. It is therefore not critical, but, on the contrary, rather betrays malignancy. There is rarely so great an abatement of symptoms as is seen in the form of bilious fever; and yet, from this causes a great tendency to a remission, though there frequently is an exacerbation that is every way alarming, from its intensity; and this may happen twice, or even thrice, in the twenty-four hours. When this happens, the disease proceeds, with hasty strides, to its fatal termination; for should not remedies at this time, especially bleeding, abate the severity of the symptoms very soon after their application, more fatal symptoms quickly supervene; the eye becomes more sad; lividity is added to the deep-toned colour of the cheek; the tenderness is much increased by pressure over the region of the stomach; nausea and vomiting commence or increase; the patient loses himself into every position; delirium ensues; the urine becomes intense in colour, and small in quantity; the extremities lose their heat; the gums become swollen and livid; the tongue red, or brown, and dry; thirst insatiable; and the drinks rejected, perhaps, as fast as swallowed. After a continuance of these symptoms for a few hours, the system seems to make a compromise with the disease, and passively yields itself up to its ravages; for there is no diminution of the danger at this moment, though the system seems less morbidly excited; for if the suffering be less, danger is increased. Now the stomach gives way; the most tormenting of all the symptoms, vomiting takes place. The fluids discharged are, for the most part, nothing but the drinks which the patient has swallowed; for these, even in the beginning, are rarely tinged with bile. But a threatening
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change soon follows; the fluids become thicker, and somewhatropy, and are now found to have mixed with them a flaky substance, of a dark colour. These flakes adhere closely to the stomach, and portions of the villous coat of the stomach, detached, and made to mix with the ejected fluids, by the effort of vomiting. The urine, at this time, is usually very scanty, or may be even suppressed; the bowels are tardy, or yield a blackish, tarry-looking, and sometimes bilious substance. The whole surface of the body, with the exception, perhaps, of the abdomen, is colder than natural; sometimes dry, sometimes moist; the hands and feet dryly cold, mottled with stagnating blood; the pulse feeble, fluctuating, or extinct; or it may be slow, composed, and might, by the inexperienced, be even pronounced natural. Sleep forsakes the patient, or he dozes, to suffer more; his respiration is hurried, or preternaturally slow. His mind may wander, but delirium is not a very usual symptom in yellow fever. Indeed, the patients, in this disease, often possess immense faculties to the very last moment of life. Some die most tranquilly, declaring, with almost their latest breath, that nothing ailed them; while others die in great agony. When this happens, it is generally when delirium is present, and when the brain, from syncope, or from paroxysms of bleeding; and attacks, fatal to the others.

The patient may now become more tranquil, from an evident mitigation of all the severe symptoms; and this short-lived truce gives rise, in the inexperienced, to hopes that are never to be realized; for now the yellowness of the skin, which gives its name to the disease, begins to show itself, and becomes the harbinger of the dreaded and fatal "black vomit." This matter is thrown from the stomach, sometimes in incredible quantities, and of various shades of colour, from dark brown to the colour of coffee-grounds, or blackness. It is ejected with very little effort, and the patient, for the most part, denies the existence of pain. Black vomit, however, does not always precede death; it is occasionally absent. But when this is the case, its place is supplied by the eructation of prodigious quantities of gas, rapidly and constantly secreted by the stomach. The gums, and other portions of the body, at this time, yield some indications of blood, which renders the aspect of the patient truly hideous. The teeth become incrusted with sordid; the tongue black and dry; the pulse preternaturally slow and feeble; or it may be, at the wrist, extinct; the skin and extremities cold; coma, or low, muttering delirium, takes place; sometimes convulsions; then death.

The prognosis in this disease must always be regarded, even in its commencement, as unfavourable, though this fever is not inevitably fatal. If the disease have commenced in an open, undisguised form, the chance is increased; but if it attack insidiously, the danger is in no small proportion to the absence of prominent or decided symptoms. If the disease assume, or can be made to put on, a regular form, that is, have its remissions and exacerbations in pretty regular order, though the symptoms run high, there appears a better chance to increase the one and moderate the other. But, on the other hand, if the disease discover no tendency to regular remission, or if reaction be but feeble and transitory, the risk is greatly augmented. If the patient sigh deeply, immediately after waking, and before he have recovered the powers of speech, the presage is bad; or even much of much with great pain, and without the part having any morbid appearance, it is equally unfavourable. Those whose arms become rigid seldom get well; and those who have an entire suppression of urine never recover. Black vomit is always a very unfavourable symptom, especially when attended by hiccough, but is not necessarily fatal, particularly in young persons. "The packing of wind," as it is called, is perhaps as deadly a symptom as black vomit. On the other hand, should there be a general abatement of the symptoms, especially of headache, with a softened skin; a general and equally distributed warmth; less jactitation; diminution of thirst, without nausea or vomiting, and the tongue beginning to clean; less tenderness in the epigastrium; bilious fecal discharges; a free flow of lighter coloured urine (and particularly if it deposit a lateritious sediment); a moderate, and generally diffused perspiration, after the abatement of the exacerbation,—the disease may be considered as less desperate, and as tending to a healthy solution. The pulse, in this disease, betrays, from beginning to end, less concern, if we may so term it, than in almost any other with which we are acquainted. Indeed, but little dependence is to be put upon it, if alone be taken as a guide; for it has been known to resemble pulse inanition, or dissolution has been near at hand; while, again, it has been known to cease, yet the patient recover.—

Treatment. The treatment of this disease is very far from being as efficacious or certain as its danger requires; yet it is not so fatal, under favourable circumstances, as what we have described. In tropical climates, it rages among strangers almost exclusively; and these, for the most part, are of a description unable to procure the best means of mitigating suffering or averting danger. In northerly situations, where the disease is, as it were, accidental, the mortality, under the best circumstances, is considerably less, though still very much too great. We may attribute some portion of the mortality to the discrepancy in the views that have been taken of the habits and nature of the disease. Some suppose it contagious in a high degree; this infallibly increases the mortality, by causing the necessary means to be withheld from the sufferer, under the apprehension of personal danger; while others look upon its nature to be the same as that of typhus, and fatally adopt a treatment conformable to such a view; and, consequently, thousands are sacrificed to a hypothesis. The opinion is now, however, daily gaining ground in yellow fever. To these remarks, we refer our inflammatory disease, and one which requires a vigorous and strictly antiphlogistic plan of treatment. But neither a correct pathology, nor the best concerted means, will avail, if the proper time for their application be lost. To be successful in the treatment of yellow fever, no time must be spent in temporizing. Yellow fever, as has just been stated, must, agreeably to the best authorities, be looked upon as an exquisite gastritis; a fact that should never be lost sight of; it is for the relief of this condition of the stomach, almost exclusively, that remedies are to be sought. It has been manifested, that dissolution forms, the pulse, fever, simulated weakness, and the feebleness of reaction in its more dangerous forms, has misled the practitioner to the fatal use of stimulants. It is the depressed, or oppressed pulse, so called—a pulse that always acquires vigour by the abstraction of blood. The quantity to be taken at any given time, cannot be defined; but, for the state of the arterial system may require the loss of a large quantity of blood to relieve it, or the pulse may become open and free by the abstraction of only a few ounces. The management of the bleeding must, therefore, be left to the discretion of the medical attendant. If the pulse rise, as it is said to do at this condition of the system, by the loss of blood, its abstraction should be continued until it become soft under the finger. Nor can any rule be laid down for
the repetition of the bleeding, but one—namely, that recourse must be had to it, whenever the system reacts with force, by which every symptom becomes more acute in the course of a day. If this occurs, it may be repeated in twenty-four hours. It is mainly owing to not taking down the excess of action of the heart and arteries when it occurs, that fatal disorganization takes place so frequently; therefore, every paroxysm should be carefully watched, that no one may pass without having the force of the pulse abated, by the loss of blood; for it may be confidently said, that the system reacts forcibly in this disease, when it will not bear the abstraction of blood, either generally or topically. If topical bleeding be resorted to, it must be from the epigastrium; therefore, either leeching or cupping must be the mode of abstraction. This state of the system is rarely found, however, after the expiration of eight-and-forty hours, unless the disease have been vigorously treated by previous blood-letting. Should this period have been lost, bleeding from the general system can rarely be successful: topical bleeding alone now promises relief; and this may be tried at almost any period of the disease, if the sensibility of the epigastrium be preserved, and the observer be sure not to mistake its cause, in the beginning of this disease; as it is almost sure to depend upon the depressed state of the pulse. For after blood has been taken in an appropriate quantity, the heat of the skin and activity of the pulse will both increase; but if stimulants be used, both will be diminished. But it is always proper, when reaction is feeble, the skin cooler than natural, and the extremities perhaps cold, but certainly preternaturally cool, to use external stimuli with a view of aiding the powers of the system in their efforts to produce a warmth upon the surface. But these stimuli must always be harmless, simple; Cayenne pepper, &c., should be applied to the feet and legs, and used until a proper warmth be restored. The bowels should be freely opened, but not violently purged: for this purpose, eight or ten grains of calomel should be given immediately after bleeding; followed, in three hours, by a dose of castor oil, if it do not operate previously to the expiration of this time. During the whole disease, the bowels should be kept open by the milder purgatives, but especially by oil, or by injections; for purging is uniformly hurtful, unless it be on the decline of the disease, and after the liver has begun to secrete large quantities of bile, when bile is necessarily the fluid flowing most in this disease. This being given: should be open during the whole attempt at cure, and these cold, almost always; that is, unless cold drinks be less acceptable to the stomach than tepid, which is sometimes the case. Ice swallowed frequently, in small portions at a time, is both acceptable and useful, and should never be withheld when it can be procured. All the drinks may be rendered cold by this substance; and these should consist of gum-arabic water, barley water, linseed tea, slippery-elm bark tea, &c. Drinks should always be given in small quantities at a time, lest the stomach reject them. If there be much sickness of stomach, attended by much tenderness upon pressure, the epigastrium should be leeched or cupped; and this may be followed by a blister if the nausea or vomiting continue. Should the headache be great after due depletion from the arm, the temporal artery may be opened, or leeches or cups be applied to the temples, behind the ears, and to the back of the neck. Under these circumstances, this occurs with frequency; but it and cold, the feet should be placed in hot water, with which is mingled a quantity of the flour of mustard, and the feet suffered to remain in it for fifteen or twenty minutes. This may be repeated, pro re nata. Fresh air should be admitted freely into the room; the bedclothes and body linens changed as often as practicable; light excluded, and noise prohibited. If there be much determination to the head, cold applications should be made, or reducing the quantity of hair, should this be thick. Partial heat may be afforded by sponging. Doctor Jackson, in his treatise on fever, recommends large bleedings, in the first eight hours of attack, even ad deligium animi. This, in robust constitutions, and when the disease commences with high excitement, has been found very beneficial; but it rarely can be proper where the disease is of a highly malignant character, as is almost always the case where much indirect debility suddenly shows itself, and, consequently, where the powers of the system are inadequate to produce a quick and sufficiently powerful reaction. In this case, however, stimulation would be more quickly and certainly fatal than bleeding, even indiscreetly urged; for, by the former, you cannot fail to increase the inflammation of the mucous membrane of the stomach, which will necessarily augment the danger; while the latter only diminishes the power of reaction; therefore, by the first practice, the cause of the disease is increased; by the second, the reaction is diminished. For the first, there may be no adequate remedy; for the second, a remedy may be found: hence, when, in the early stage of yellow fever, recourse is had to internal stimulants, the case is almost uniformly fatal; whereas, bleeding, even when injudiciously employed, only depresses the system, which may recover by the aid of external stimulants; and the case is not as desperate as when stimuli have been thrown into the stomach during the state of active inflammation. In the case, however, under consideration, it is only an abuse of the proper remedy; for, if the abstraction of blood be judiciously made in this state of the disease, the hot, or tepid, application to the prostrate, will react promptly; for the pulse, in the beginning of this disease, is in a state of depression, as has already been explained, and not of absolute weakness; for there have been instances of recovery, as already stated, after spontaneous hemorrhages from various parts of the body, but where the abstraction of blood from the general system by the laesure would certainly have proved fatal. Does not this flow of blood intimate to us the propriety of imitating it, by the application of a leech or two to various parts of the body? One thing is very certain in the generality of cases of yellow fever, that when bleeding is a useful and necessary operation to afford relief, stimulants never succeed: therefore, when the time is past for both general and topical bleeding, it is in vain to attempt the relief of the patient by the exhibition of stimulants. By doing little or nothing at this time, the recuperative powers of the system, if left to themselves, may restore the patient; for all that art can do, at this time, is not to thwart or prevent their efforts. We must, therefore, be rather the spectators of the conflict of the system, than active agents against the disease; taking care, however, constantly to remove, as much as it may be in our power, any obstacle that may appear to interfere with the general progress to recovery: an irregular condition of the bowels, of the stomach, of the state of air, &c. &c. Nausea and vomiting are troublesome conditions of the stomach, and its relief should be attempted by leeching, cupping, and blistering, over its region, by Seltzer water, the effervescing draught, lime water and milk, &c., but never, or but very rarely, if cold, to the latter. Partial heat may be required by nauseating stimulants: after decided marks of debility, clove tea, mint tea, or strong coffee, with mustard to the epigastrium may be tried. When black vomit has come on, the spirit of turpentine, with the oil of cinnamon, in thirty drop doses, has been certainly of
temporary use, and occasionally of permanent benefit. This may be abated by small quantities of very cold water, or by frequently swallowing small portions of ice and snow. The stomach is in favour of warm drinks: when this is the case, the craving or instinct should be indulged. Hicough is sometimes extremely distressing in this complaint. Camphor, in doses of from five to ten grains, will sometimes relieve it. Should it offend the stomach, it may be given very advantageously in a gill of rich flavished tea, and thin starch, or muclinge of gum-arabic, as an enema. The utmost attention must be constantly paid to the patient by the nurse: he should have the luxury of fresh air constantly, and the frequent renewal of clean, fresh bed linen and bedclothes.

FEVER, TANNEAUS LE, OF TANQUILLUS FABER; a classical scholar of great eminence in the seventeenth century. He was born at Caen, in Normandy, in 1615, and was educated at the college of La Flèche, at Paris, where he distinguished himself by his proficiency in Classics. Richelieu procured him a pension of 2000 livres, with the office of inspector of works printed at the Louvre. After the death of that minister, being neglected by his successor, cardinal Mazarin, he gave up his employment, and went to Langres, where he embraced the Protestant sect, and became a minister. He wrote, among other works, a work on the Smarum, and was made professor of classical literature. After residing there some years, he was invited, by the prince palatine, to Heidelberg, and was about to quit Saumur for that place, when he died, in 1672. His works, which are numerous, consist of commentaries on several of the Greek and Latin classics; translations from Xenophon, Plato, Diogenes Laertius, Plutarch, Lucian, &c.; letters; lives of the Greek poets, in French; and Greek and Latin poems. Voltaire, in his Siècle de Louis XIV., expresses doubts of the sincerity of Le Fèvre in his change of religion, and says that he despaired those of his sect, and lived among them more as a philosopher than a Huguenot. He had two daughters, one of whom was the celebrated madame Ducier, and the other was married to Paul Baudry, professor of ecclesiastical history at Utrecht. His son, after having been a Calvist minister, returned to the religion of his ancestors.

FEVERABEND; a family of Frankfort on the Main, celebrated, in the sixteenth century, on account of the number of artists and literary men who derived their origin from it. The eldest that is known, John Feyerabend, was an engraver on wood. He has marked his productions with the initials of his name. A New Testament, in the Latin language, is adorned with his cuts.—Sigismund Feyerabend, a draughtsman, engraver on wood, and printer, published several excellent editions of ancient writers, among which was one of Livy, folio, in 1568, with neat copper-plates by Josse Amman. Papillon mention a collection of plates for the Bible, quarto, in 1569, several of which are marked with the initials of Sigismund Feyerabend. He also speaks of Icones Novi Testamenti Arte et Industria singulari expressae (1571, 4to) in which copper-plate engravings, by this artist, occur. Sigismund Feyerabend published the following collections: 1. Annees seu Historia Berum Belgicarum a diversis Auctoris ad hoc usque nostra Tempora conscripta et deductae (Frankf., 1560, 2 vols., folio); 2. Monumenta illustrium Conditione et Doctrina Virorum, Figuris artificioseissimia expressa (Frankf., 1560, 3to). He also published the following, the Gymnacum, a collection of female costumes.—Charles Sigismund Feyerabend succeeded his father in the same business in 1580. He published several collections of copper-plate engravings.

FEYJOO Y MONTENEGRO, BENEDICT JEROME; a Spanish Benedictine monk and writer of the last century. He published his speculations on a vast variety of topics in his many works designed for popular use, whence he has been sometimes styled the Spanish Addison. His Teatro Critico Universal (14 vols, 4to, Madrid, 1733), and his Cartas eruditas y curiosas, are both works of merit, and are devoted to a common object—the refutation of vulgar errors, and the abolition of prejudices. Divinity, law, medicine, and philosophy, successively occupy his attention; and some of the superstitions of his church and nation are animadverted on with freedom and good sense. He died in 1765. A new edition of his works was published in 1778, 15 vols, 4to; and a selection from his essays and discourses appeared in an English translation, 1780, 4 vols., 8vo.

FEZ (part of ancient Mauritania); a country in Africa, formerly a kingdom of great extent, now a province of Morocco; bounded north by the straits of Gibraltar and the Mediterranean, east by Algiers, south by Morocco, and west by the sea. It is divided into nine provinces or districts—Slavoya, Temesna, Fez, Beni-hassen, Garb, Shaus, Teldra and Gareit; the whole united to the empire of Morocco. The principal towns are, Fez, the capital, Mequines, Mellila, Ceuta, Tangier, Larache, Mamora and Saléel; but the kingdom is not confined to these places only, for it is fertile, producing, in the greatest abundance, corn, fruit, fish, salt, gum, wax, &c. Oranges, lemons, figs and olives everywhere abound. The Moors, however, are but bad farmers, and cultivate only in proportion to their wants, so that two-thirds of the country lie waste.

FEZ, or FAS; a city of Morocco, capital of the country of Fez; 160 miles south Gibraltar, 200 N. N. E. Morocco; Lon. 5° 20' W.; lat. 33° 50' N.; population, according to Ali Bey, about 100,000; Jews, 2000; population, according to the improbable statement of Jackson, 390,000. It was built in 703, by Edris, and soon became a large city, and the capital of the western Mohammedan states. According to Leo Africanus, it contained, in the twelfth century, 700 temples and mosques, of which fifty were magnificent, and adorned with marble pillars. It was esteemed a sacred city, and when the road to Mecca was shut off in the far off times of the Hegira, the western Mohammedans made pilgrimages to Fez, and the eastern to Jerusalem. It was also famous as a school of learning, at a time when knowledge was almost exclusively possessed by the Saracens. Its numerous schools of philosophy, physical and astronomy were not only restored to all the Mohammedan kingdoms of Spain and Africa, but were attended by Christians. The situation of Fez is singular. It lies in a valley, which is formed, by surrounding hills, into a sort of funnel, the higher parts of which are covered with trees, orange groves and orchards. A river winds through the valley, refreshing the fields, supplying the city with water, and turning numerous mills. The gardens around it form a delightful amphitheatre. On a height, above the rest of the city, stands New Fez, founded in the thirteenth century, a well-built town, inhabited chiefly by Jews. The principal edifice is the mosque of Carubin, described by Leo as one mile and a half in circumference; but Europeans are not permitted to see it. Fez contains 200 caravassaries or inns, two or three stories high. The hospitals, once numerous, are, in a great measure, fallen to decay. The shops make a large part of the town; the caffes are immensely crowded. Here are still some remains of those learned institutions for which the city was once distinguished. Fez is said now to exhibit a singular mixture of splendour and ruin. In 1799,
65,000 of the inhabitants are said to have been carried off by the plague.

FEZA. See Fasa.

FEZZAN (Arabic, Phazonian): a country in Africa, situated to the S. of Tripoli, E. of the Great Desert, and sixty days' journey W. of Cairo. Horneum, the German traveller, informs us, that the greatest length of the cultivated part of this country is about 300 English miles, from N. to S., and the greatest width, 200 miles, from E. to W.; but the mountainous region of Harutsch to the N., and other deserts to the S. and W., are reckoned within this territory. The borders on the N. are Arabs, nominally dependent on Tripoli. Fezzan is bounded E. by the Harutsch and line of deserts, S. and E. by the country of the Tibboos, S. W. by that of the nomadic Tuarecks; W. are Arabs. The kingdom contains 101 towns and villages, of which Mournouk is the capital. The climate is at no season temperate or agreeable. During the summer, the heat is intense, and, when the wind blows from the south, is scarcely supportable, even by the natives. The soil is light and sandy, and produces maize, barley, pulses, melons, cucumbers, onions, garlic, and some wheat. The most common trees are the date, white thorn, and the tallow. Here is little or no rain, but the vegetation is luxuriant, from the number of subterraneous springs. The population of Fezzan is loosely estimated, from 75 to 150,000, all of whom, without exception, profess the Mohammedan religion.

FIBRIN: a peculiar organic compound, found both in vegetables and animals. It is a solid, of a greasy appearance, insoluble in water, which softens in the air, becoming viscous, brown, and semi-transparent. On hot coals it melts, throws out greasy drops, crackles, and evokes the smoke and odour of roasting fat. It is procured, in its most characteristic state, from animal matter. It exists in chyle; it enters into the composition of blood; and it forms the chief part of muscular flesh; and hence it must be regarded as the most abundant constituent of the soft solids of animals. According to the analysis of MM. Gay-Lussac and Thenard, it is composed of carbon 55.36, nitrogen 19.094, oxygen 19.685, and hydrogen 7.021.

FIBROLITE: a mineral first found in the Carnatic, where it occurred in fissures, traversed obliquely by cracks, as a component of the granite, which contains the corundum. It has since been found in the U. States, in some of the most remarkable veins with rhombic balls, whose angles are about 100° and 80°. It is harder than quartz, of a grayish-white colour, and a specific gravity of 3.214. It is infusible before the blow-pipe; Chenevix found the specimens from the Carnatic to consist of silica 38, alumine 58.25, and oxide of iron 0.75.

FICHTE, Johann Gottlieb, was born at Rammenau, near Bischofswerda, in Upper Lusatia, in 1762, and owed his early instruction to the assistance of a Mr Von Militz. At a later period, he received a classical education at the famous Schul- forte, one of the Saxony royal schools. He then studied at Jena, Leipzig, and Tittenberg, passed several years in Switzerland and in Prussia Proper, and in Königsberg enjoyed the society of the great Kant. His Versuch einer kritik aller Offenbarung (Essay towards a Criticism of all Revelation), Königsberg, 1792, attracted general attention, and procured him the professorship of philosophy in Jena, in 1794. In 1801 he was one of the most eminent professors of that university during its most brilliant period. Here he published, under the name of Wissenschaftslehre (Theory of Science), a philosophical system, which he founded at first on the system of Kant, from whom, however, he gradually deviated. On account of an article Ueber den traurig unseres Glaubens an eine göttliche Weltregierung (On the Reasons of our Belief in the divine Government of the Universe), which appeared in his periodical Philosophical Journal (3rd No. 3), he was under the suspicion of sceptical views. This gave rise to an inquiry, and Fichte resigned his professorship. He accordingly received his dismissal, and went to Prussia, where he lived for some time in private at Berlin. In 1805, he was appointed professor of philosophy without permission to spend the winter at Berlin. During the war between Prussia and France, he went to Königsberg, where he delivered lectures for a short time, returned to Berlin after the peace of Tilsit, and, in 1809, on the establishment of the university in that city, was appointed professor of philosophy. Fichte's philosophy, though there are two distinct periods to be distinguished in it, is a consistent idealism, representing that all the individual perceives without himself, or, rather, all that is distinguished from the individual, the ego, as a creation of this I or ego. It would be impossible to give our readers, in so short a space as this, an account of the grand system of his bold system. We must refer the student to his Ueber den Begriff der Wissenschaftslehre (Jena, 1794); Die Wissenschaftslehre in ihrem allgemeinen Umrisse (Berlin, 1810); and the Anweisung zum seligen Leben (Berlin, 1806). His practical philosophy is of the purest character. His idealism led him to represent the life of the mind as the only real life, and everything else as a mere delusion, and to believe in an almost absolute omnipotence of the will. To excite his pupils to the highest virtue and self-denial, was his constant aim as a teacher, and his influence was great, not merely through his power of expression, and the originality of his ideas, but through the conviction with which he inspired his hearers of his full belief in, and entire devotion to, his principles. His heart was open to every noble and good feeling. Unshaken integrity, constant friendship, devoted love of what he conceived to be true and good, were his characteristic traits. His own excellence of life sometimes made him not very indulgent towards others; and some of his doctrines, which every one would acknowledge to be good in the main, he carried too far; as, for instance, his views on national education: he wishes every child to be taken from its mother immediately after its birth, and to enter the public school, if the country of Germany was bleeding under the wounds of war, he, like his countrymen in general, considered Napoleon as the source of the whole distress of his country. Circumstances, in fact, hardly allowed a German to take a different view of the subject, and his ardour against the French was in proportion to the powers of his mind. In 1808, he delivered Reden an die Deutsche Nation (Addresses to the German Nation), published at Berlin in 1808, with genuine courage; and of which we may mention that, though they were directed against the French, the Prussian government prohibited their republication in 1810. Fichte's Science, Theorie der Wissenschaft presented to the public in 1806, was read by the Elector of Saxony near Berlin, in 1813, when the city was full of Prussian and French wounded soldiers, females of all classes served in the hospitals, the male inhabitants being all engaged in the war. Fichte's wife, who was among the ladies thus employed, was attacked by the disease in the same year. She recovered, but her husband, who had paid unwearied attention to her, was, in his turn, attacked by the disease, and died, in consequence, in January, 1814. He left a son, who has also devoted himself to philosophy.

FICHTELBERG. There are two mountains of
this name: 1. The Fichtelberg in the principality of Bayreuth, from which several ridges of mountains extend in all directions. This is covered with pines (Pinus), hence its name, and is thirty-three miles in length and nineteen in breadth. The principal of the two ridges, of which this mountain consists, is of granite; but the lateral branches, in particular towards the Nuremberg, are of limestone. It is rich in iron, vitriol, silver, lead, copper, marble. The principal peaks are Schneeburg, 3689 feet; the Olschenkopf, 3681; the Fichtelberg, 3521. The Saal, Eger, Naab, and the Maine, have their sources in this mountain. The Naab empties its waters into the Danube, the Maine into the Rhine, the Saal and the Eger into the Elbe; so that the waters of this mountain flow into three different seas. 2. The Little Fichtelberg, near Wiesenthal, the highest mountain in the Saxon Erzgebirge, is 3731 feet in height.

FICINO—MARSILIO; a celebrated physician at Florence, who distinguished himself in Italy by his study of the Platonic philosophy. His father was the physician of Cosmo de' Medici, who held him in high estimation. Ficino was born at Florence in 1433. His early display of talent attracted the notice of Cosmo, who caused him to be instructed in the ancient languages, and afterwards induced him to translate the writings of Plato and the New Platonists into Latin. He afterwards employed him to aid in establishing a Platonic academy (about 1460). Ficino engaged in this plan the more readily, because he viewed the Platonic philosophy as a sort of preliminary to, and confirmation of, the Christian faith. In his accounts of this philosophy, he did not always make an accurate distinction between Plato and the new Platonists, as appears from his Theologia Platonica; de Immortalitate Animorum et de Fidei Insequentia (Platonic Theology; on the Immortality of the Soul and eternal Happiness), in which he particularly defends the immortality of the soul against the Aristotelians of his age. Mystic and fanciful views are interwoven with this defence; astrological doctrines, for example, which he afterwards rejected. He died 1499, after having laboured zealously for the diffusion of the Platonic philosophy, and having formed many excellent scholars by his writings and discourses. His Latin works were first published by Basle, 1829; and a larger part of them, by Paris, 1762.

FICTION, in law, is an assumption made for the purposes of justice, though the same fact could not be proved, and may be literally untrue. There are many fictions in the civil law, and a fiction in law is said by the civilians to be the assumption of an untruth for a truth, in a thing possible to have been done, but which was not done. The declaring that a note or bond, made in a foreign country, was made in the county where the suit is commenced upon it, is an instance of a very common fiction, adopted on the ground that suits can be brought in the county only on the ground where they are made; but the practice has been introduced of declaring that the contract on which an action is brought, was made in the county, though the fact seems to be entirely immaterial; for transitory actions follow the person, and it is only of such that the fiction is admitted. But other fictions are more material. It is a rule, that a fiction of law shall work no wrong; and the fictions in use generally come within this rule.

FIDEICOMMISSUM, in the civil law; a direction of a testator, that his heir shall give a particular thing (singuline fideicommissum), or a part or all of the property of another (universalen fideicommissum), either immediately, or after a certain time, or on the occurrence of certain circumstances, to another. The heir, who was thus obliged to make the inheritance to another, was called fiduciarius, the receiver fideicommissarius. Under Vespasian's reign, it was decreed, that the fiduciarius should be allowed to retain a quarter of the inheritance at the time when he gave the rest to the fideicommissarius, (senatusconsultum Vespasianum; quarta Trebellianica). The modern fideicommissa are very different. They are establishments, by which an amount of property is made unalienable, and the law declares that the property, in all countries of Europe, such fideicommissa cannot be established except with the permission of government; and in these countries, the governments can also declare a fideicommissum dissolved, so that the estate shall follow the common rules of inheritance. From such family fideicommissa (fideicommissa successorum) the quarta Trebellianica, of course, is not deducted.

FIELD MOUSE. See Mouse.

FIELDING, Henry, an English novelist, eminently distinguished for humour and knowledge of life, was born at Sharplum park, in Somersetshire, April 29, 1707. He was educated at Eton, whence he removed to Leyden; but the strained circumstances of his father shortened his academic studies, and the same cause, added to a dissipated disposition, turned his attention to the stage. His first dramatic piece was entitled Love in several Masks, which met with a favourable reception. The second, called The Temple Beau. He did not, however, generally succeed as a dramatist; for, although no man possessed a stronger feeling of the ridiculous, or executed detached scenes with greater humour, he took too little time to construct his dramas, with a view to plot and effective development. Many of his are more than more than free translations from the French, as, for example, The Miser. In some of these pieces, he touched upon politics, and was one of the writers who gave Sir Robert Walpole a pretext for his act to limit the number of theatres, and submit dramatic performances to the license of the lord chamberlain. In his twenty-seventh year, he married Miss Craddock, a lady of some fortune, and, at the same time, by the death of his mother, became possessed of a small estate in Dorsetshire. He immediately commenced country gentleman, on a scale which, in three years, reduced him to greater indigence than ever, with a young family to support. He then, for the first time, began to think of Providence, and, for immediate subsistence, employed his pen on various miscellaneous subjects; and The Champion, a periodical paper, An Essay on Conversation, An Essay on the Knowledge and Characters of Men; A Journey from this World to the next, and The History of Jonathan Wild, were among the early fruits of his literary industry. In 1742 appeared his first novel, Joseph Andrews, in which the Cervantine style of humour is admirably imitated. It immediately received the attention to which it was entitled; but success as a novel-writer was not very likely to advance his practice of the bar; and the government attached it sufficient for a manner of life never sufficiently regulated by the rules of prudence. Soon after the appearance of Joseph Andrews, he was further impeded in his profession by repeated attacks of the gout, added to which, his domestic afflictions were greatly increased by the death of his wife. In 1746 he published a periodical paper, entitled The True Patriot, which was followed by The Jacobite Journal. These labours on the side of the government were rewarded with the then not altogether reputable office of a Middlesex Justice. To the credit of Fielding, however, he did much to render it more respectable, by his interference in the publication of crimes, and to the regulation of the police. He published more than one tract upon the subject;
and the principal of them, his Enquiry into the Cause of the late Increase of Robbers, &c., made a great impression at the period. In the intervals of those serious occupations that he wrote his celebrated Tom Jones, which was followed, in 1751, by Amelia. At length, however, his constitution began to yield to the repeated attacks upon it, and he was recommended by the faculty to take a voyage to Lisbon. He followed their advice; and the last gleams of his wit and humour are to be found in his Journal on that occasion. He reached Lisbon in August, 1754, and about two months after expired. The chief merits of Fielding, as a novelist, are wit, humour, correct delineation of character, and knowledge of the human heart. No novel exceeds Tom Jones in the exhibition of character and manners, in the development of the story, and the management of the catastrophe. Amelia, with less variety and invention, is, in regard to portmanteau and knowledge of life, almost equally felicitous; while, as to pure raciness of humour, Joseph Andrews is often deemed before both. Even Jonathan Wild, coarse as are the persons and doings described, is irresistible in the way of humorous caricature, as well as instructive as a satire.

FIELDING, SARAH; third sister of Henry Fielding. She was born in 1714, lived unmarried, and died in Bath, where she long resided, in April, 1768. She was the heroine of the novel of David Simple; a less popular production of a kindred class, called The Cry, a dramatic Fable; Xenophon's Memoirs of Socrates, translated from the Greek (for which she was favour'd with some valuable notes by Mr. Harris of Salisbury); The Countess of Delwy; The History of Ophelia; The Lives of Cleopatra and Octavia; and one or two more of a minor class.

FIELD PIECES; small cannons, from three to twelve pounders, carried with an army. Field staff; a staff carried by the gunners, about the length of a halbert, with a spear at one end, having on each side euns screwed on, like the cock of a matchlock, into which the bombardiers screw lighted matches when they are upon command; and then the field staffs are said to be armed.

FIELD WORKS, in fortification, are those thrown up by an army in besieging a fortress, or by the besieged to defend the place; as the fortifications of castles.

FIERI PACIAS, in law, is a judicial writ of execution issued on a judgment, by which the sheriff is ordered to levy the amount of the judgment on the goods and chattles of one party, for the benefit of another. See Execution.

FIERY CROSS, See Cravatta.

FIESCO, GIOVANNI LUIGI DE' FIESCO, count of Lavagna, a distinguished victim of unsuccessful ambition in the sixteenth century, was the head of one of the noblest houses in Genoa. He became master of a large patrimony at the age of eighteen, and, being surrounded with dependents and flatterers, and really possessed of admirable talents and eloquence, he was readily induced to aim at that power and distinction in the state which was then possessed by the family of Doria, headed by the famous Andrea Doria. The latter, whose patriotism and great qualities had justly raised him to the distinction of first citizen, beheld with jealous eye the elevation of his nephew, and a Giunnetto, a youth of brutal and insolent character, a great degree of discontent was engendered among the nobles of Genoa, who, forming a party against Doria, willingly accepted a leader of the wealth and talents of Fiesco. The court of France, anxious to detach the interest of the French emperor, was easily induced to favour this enterprise, to which the concurrence of Pope Paul III., who furnished some galleys, was also afforded. Although Andrea Doria received some intimation of the design in agitation, Fiesco concealed himself with so much circumspection and appearance of tranquillity, that he could not be induced to believe aught to his prejudice. After several meetings, the plan of the conspiracy was fixed, and the destruction of the Doria family formed an essential part of it. On the evening of June 1, 1547, Fiesco, who had prepared a galley under pretence of a cruise against the Turks, waited upon Andrew Doria, to request permission to depart from the harbour early in the morning, and took his leave with strong demonstrations of respect and affection. The same evening, however, he assembled a large body of his partisans at his house, on the pretence of an entertainment, to whom he made a warm and eloquent address; and, their concurrence being unanimous, he hastened to the apartment of his wife, and acquainted her with his intention. She earnestly, and in vain, entreated him to abandon his desperate undertaking. He took leave of her, saying, "Madam, you shall never see me again, or you shall see every thing in Genoa beneath you." While the city was buried in sleep, he sallied forth, preceded by 600 armed men, and, despatching parties to different quarters, himself proceeded to secure the dock, in which the galleys lay. He went on board one of them, armed with a sword, and hewed a plank to the captain galley, when the board gave way, and, falling into the water, encumbered with his armour, he sank to rise no more. Thus terminated the life of this young and able votary of ambition, at the early age of twenty-two. His confederates failed in their attempt on Andrew Doria, but Gimmelato fell beneath their swords. The loss of their leader, however, proved fatal to the conspiracy; his brother Jerome was deserted, and the whole family paid the penalty of the ambition of their head, by ruin and proscription.

FIESOLE (so called from the monastery to which he belonged); one of the most celebrated restorers of painting in Italy. His family name was Santu Tosini. He was born, 1387, at Mugello, a district of the Florentine territory. In 1407, he entered the Dominican order, under the name of Fra Giovanni da Fiesole. He was also called angelico and il bello (the blessed), on account of his sacred and delightful productions, in which grace and angelic beauty are the leading characteristics. The Dominican order encouraged, among its members, the acquisition and practice of the profane sciences and arts, and Giovanni devoted himself entirely to religious paintings. He not only ornamented sacred books, but also executed large fresco paintings for his monastery. His industry was immense, and all the profits were expended in acts of benevolence. His merits were soon known and acknowledged. Cosmo de' Medici, who personally knew and loved the pious artist, employed him in painting the monastery of the Franciscans, and the church of the Dominicans. In the monastery of St. Mark, he adorned all the cells with large fresco paintings; and a fine Annunciation, among other paintings, is still discernible upon the walls. These pictures gained him so much celebrity, that Nicholas V. invited him to Rome, to ornament his private chapel in the Vatican, the chapel of St. Lawrence, with the most important scenes from the life of this saint. Sketches of these pictures appeared at Rome, in the year 1810, La Pittura della Capella di Nicola V., &c. (Paintings in the Chapel of Nicholas V., &c.), by Francis Gius- camino Romano. Vanni relates the most striking events of his life, his humility, innocence, and purity of this master, which also show that he considered the exercise of his art as a most solemn and sacred
employment. So scrupulous was he in the observance of the rules of his monastery, that the pope, perceiving how much his constant and unceasing toil and labour affected his health, gave him permission to eat animal food. He replied, with great simplicity, “My prior has not granted me permission to do it.” Such was his submission, that he would undertake no work for other monasteries, or for private persons, without the permission of the pope. He always delivered the proceeds. On being reproached for this conduct, he replied, “True riches consist in wanting little.” He declined, with humility, the dignity of archbishop of Florence, offered him by the pope, and which was bestowed, at his request, on his brother Antonio, who, he said, was more worthy of it. He was contented with his little cell, in which he devoted himself constantly to religious meditation and the painting of subjects from sacred history. He died in 1454, aged sixty-eight, at Rome, where he had painted the chapel of the Holy Sacrament in the Vatican, and was buried in the church Dei Minerva. He has been beatified by the church. His only undisputed scholar, whose works still remain, is Benozzo Gozzoli, whose numerous and well-preserved paintings are found in the Campo Santo in Pisa.

FIFE; a wind instrument of a conical kind, consisting of a short brass or iron tube, with holes disposed along the side, for the regulation of its tones. FIFE, or FIFESHIRÉ; an extensive county in the eastern part of Scotland, is situated between 50° 3’ and 50° 25’ north latitude, and is peninsular in its form, being bounded by the river Tay on the north, by the German ocean on the east, by the Firth of Forth on the south, and the counties of Perth, Clackmannan, and Kinross, on the west. Its medium length from east to west is about thirty-six miles, and its medium breadth from north to south about fourteen miles. At an early period, Fife included the counties of Kinross and Clackmannan, and was known by the name of Ross, i. e. the peninsula; Culross signifying the lower part of the peninsula, Kinross, the head of the peninsula, and Muckcross, now Fifeness, the mouth of the peninsula. In these days, nearly the whole of this extensive tract was subject to the thanes of Macduff, whose principal residences were Cupar and Falkland, which were confiscated and attached to the crown of Scotland in 1424, by the exacting tribute of Murdoc, the last chief. The county is now divided into sixty-one parishes, distributed into four presbyteries, which meet at their respective seats, St. Andrews, Cupar, Kirkcaldy, and Dunfermline.

Fife exhibits numerous inequalities of surface, but contains no ground that can properly be termed mountainous. It is divided into two parts by an elevated tract, stretching eastward from the borders of Loch Leven, in the adjoining county. The highest hills are the Lomonds, by which it is partly separated on the west from Kinross-shire; East Lomond being 1460 feet above the level of the sea. In the south-east, Largo, with its numerous populous villages, and the other side of the Firth, has an elevation of only 932 feet. The hills on the north are a continuation of the Ochil Hills. The aspect of the county is beautiful and populous along its shores, but on ascending inland it becomes rather bleak in appearance. There are two more ancient chief seats than Leven, which issues from the celebrated Loch of the same name in Kinross-shire, and, after an easterly course of twelve miles through a beautiful strath, falls into the Firth of Forth at the port of Leven, where there is safe shelter for shipping. On this strath the mean cultivation is chiefly arable, with a few gardens for salmon and trout. It is joined by the Lothrie and by the Orr, the latter of which receives the Lochty.

The Eden is formed by the confluence of several small streams in the parishes of Strathmiglo and Falkland, and, in a north- easterly direction by Cupar, the county town, it loses itself in the German ocean, about two miles north-west of St. Andrews. It abounds with red and white trout, and has a salmon fishery at its mouth. The Gair, or Guard bridge over this river, consisting of six arches, was built in the beginning of the last century. The lakes in this county are small; some have been drained and the ground cultivated, but several still remain. The Loch of Lindores in the north is a beautiful sheet of water, about four miles in circumference. Kil-Cougach Loch in the south-east is nearly of an oval form, and two miles in circuit. Both these are frequented by water fowl. Luddlengie, Camilla Loch, and Lochfifty are situated in the west.

Fife abounds in coal, lime, ironstone, and freestone. The climate, as no part of the county exceeds nine miles from the sea, in general is much milder and more favourable to vegetation than in many districts farther south. The soil is of various characters, including clay-loam, gravel, sand, and moss. Along the Forth it is for the most part of an excellent quality, and produces luxuriant crops of all kinds,—wheat, barley, beans, oats, grass, turnips, and potatoes. The ground here, when enclosed and laid out for pasture, is in a high state. The sandy soil in this division and the high land round the Eden the soil is inferior; whinstones abound in it, and there are several heathy and barren moors. The valley on each side of the Eden, which as far east as Cupar was formerly called Strath-Eden, or the Howe of Fife, is very productive. Northward from this valley to the west of the river Tay the land has a whin-rock bottom, but even in this hilly district the soil is in general excellent, and there are some uncommonly fertile valleys.

The south and east coasts of the county are skirted in most places by links, which usually consist of sand that has drifted from the sea shore, and has buried the original soil often to the depth of several feet. Rabbits are numerous in these tracts. The agriculturé of Fife-shire bears a high character. Many of the hills are altogether arable, and four-fifths of the county are stated to be under cultivation. Within the last forty years many woods have been planted in the county, and draining has been more extensively practised here than in any other part of the kingdom. Fife has been long distinguished for its breed of cattle, both for fattening and dairy stock. The chief manufacture of Fife is linen, which embraces various kinds of the fabric, damasks, diapers, ticks, &c. Brewing, distilling, and the fabrication of leather, soap, candles, bricks, and tiles are also carried on. Ship-building is followed in several of the ports. The foreign trade of the county is chiefly with the north of Europe; but its coasting trade is of the most importance. The fishery both for herrings and white fish is also a source of wealth and occupation to the inhabitants. Fifeshire contains twelve royal and twelve papal parishes, of which the most important, namely, St. Andrews, Cupar, Anstruther Easter, Pittenweem, Crail, and Anstruther Wester; Kirkaldy, Dysart, Burntisland, and Kinghorn; Dunfermline and Inverkeithing. (See notices of the more important of these places under their proper heads.)

The population of Fifeshire in 1801, 98,743; in 1821, 128,900.

FIFTH, in music; a distance comprising four diatonic intervals, that is, three tones and a half. Fifth sharp is an interval consisting of eight semitones.

FIG-TREE (Ficus carica) is a native of Asia, Africa, and the east of Europe. It has been cultivated from remote antiquity in the countries surrounding the Mediterranean, where it forms a principal article
of food in many places. The stem is from fifteen to twenty-five feet high, with a trunk sometimes two feet in diameter, giving out a great number of longer or twisted, planar limbs, branches, which are grayish and rough when young; the leaves are deciduous, of the size of the hand, having three to five rounded lobes; the flowers are very small, unisexual, contained in great numbers in a common receptacle, which is freely and constantly at the summit, where it is almost closed by a series of little teeth; the male flowers occupy the superior part of this receptacle, and the female, which are the most numerous, the bottom, and all the remaining part of the cavity; each ovary becomes a seed, surrounded with a pulp, which, together with the receptacle, forms the fruit. The fruit is solitary, generally of a purplish colour, has a soft, sweet, fragrant pulp, and is much esteemed, being constantly brought upon the table, during five months of the year, in the south of Europe. The process of increasing and ripening the fruit is an art which requires much attention. This, as it is practised in the Levant, is called caprification, and is a very interesting process. It is thus described by Tournefort, and other travellers in the East. The operation is rendered necessary by the two following facts, viz., that the cultivated fig bears, for the most part, female flowers only, while the male flowers are abundant in wild figs; and, secondly, that the flower of the fig is upon the inside of the receptacle, which constitutes the fruit. It is hence found necessary to surround the plantations and gardens, containing the figs, with branches and limbs, bearing male flowers from the wild fig-tree; thus preparing the way for the fertilising the female flowers in the garden. And from these wild flowers, the fertilising pollen is borne to the other figs upon the wings and legs of small insects, which are found to inhabit the fruit of the wild fig. It requires, therefore, a very particular observation and careful study of the wild fruit to know the precise time when the insects will be ready to take wing, or they might be lost. When it is found they are just ready to leave the fig, the boughs are placed as above described, and an abundant crop is the result. The fig-tree, in its wild state, is a low, distorted shrub, bearing fruit destitute of any agreeable flavour. Dried figs are easier of digestion than nourishing than the fresh fruit, and form a considerable article of commerce. The best come from Turkey, Italy, Spain, and Provence; those of the Archipelago are inferior in quality. Dried figs, with barley bread, are now the ordinary food of the lower classes in Greece and the Archipelago. The ancients procured a sort of wine from figs by a method which is still in use in the Archipelago. Several hundred varieties are cultivated in Europe, some of which are excellent.

There are five principal methods of reproducing this valuable tree:—1. By seeds, which is but little employed, on account of the length of time requisite for a good tree, and is of very bad quality; but it is the only method by which new varieties can be produced. The figs should be first washed in water, and those seeds rejected which float upon the surface. 2. The easiest mode is by suckers, which may be separated from the roots of the old trees. 3. In the month of March or April, branches are passed through pots containing earth, which is occasionally watered to keep it moist; roots are produced with facility, and the branches may be separated in the autumn. 4. A method which requires less trouble, and is most in use, is the following: in March or April, a bough about two feet long and two years old is selected; the largest of its branches is reserved for the future stem, and the others are extended in the earth, and give out roots; care should be taken to cover at least two-thirds of the bough with earth, otherwise the terminal shoot is not developed. 5. Grafting has been neglected, on account of the facility with which the fig may be reproduced by these two last methods. When used, a mixture of wax and turpentine is employed to prevent the flowing of the sap. This tree does not bear transplantation well, and, consequently, this is not often attempted. Almost every variety bears fruit twice in the season.

The species of ficus are shrubs or trees, with alternate leaves and branches, and having a milky and more or less acrid juice, inhabiting the intertropical regions of the globe, a few species excepted, which are found in warm climates, though without the tropics. More than 100 species are known, the most remarkable of which are the following: F. sycomorus, a large tree, the fruit of which is eaten in Egypt and the Levant. The wood is said to be incorruptible, which would seem to be proved, as the cases containing the Egyptian mummies are made of this tree. F. Indica (Indian fig or banyan tree) has been celebrated from antiquity, from its letting its branches drop and take root in the earth, which, in their turn, become trunks, and give out other branches, a single tree thus forming a little forest. F. elastica, the juice of which yields countchose, or gum elastic, has not been long known, and is a native of the mountains of Nepaul.

FIGURAL or FIGURATE NUMBERS; an arithmetical amusement, much in vogue at the beginning of the seventeenth century. Jac. Bernoulli, and particularly Wallis, in his Arith. Infinit., and L' Hospital, in his Algebra, have made it a subject of investigation. These numbers are formed by the terms of arithmetical series, of all sorts, in which the first member is always unity. For example:

I. — 1, 2, 3, 4, 5, 6, &c.
II. — 1, 3, 5, 7, 9, 11, 13, 15, &c.
III. — 2, 4, 6, 8, 10, 12, 14, 16, &c.
IV. — 4, 5, 6, 7, 8, 9, 10, 11, &c.

Those in the second row are called triangular numbers, because their units may be arranged in pure equilateral triangles; the members of the third row are called square numbers; those of the fourth, pentagonal, &c.; and so there are also hexagonal, heptagonal, &c. If the terms of the polygonal series are again added, in succession, we obtain other orders, as the members of each of the rows are called, thus,

a. — 1, 3, 6, 10, 15, 21, &c.
b. — 1, 4, 10, 20, 35, 56, &c.
c. — 1, 5, 14, 30, 55, 91, &c.
d. — 1, 6, 18, 40, 75, 126, &c.

are pyramidal numbers, because, by pincing over one another the polygonal numbers in the order in which they are added, so that the smaller come over the next larger of the same sort, regular pyramids are formed. Thus the members of the row a form triangular, the members of the row b, quadrangular, and of the row c pentagonal pyramids.

FIGURANTES; those dancers of a ballet who do not dance singly, but many together, and serve to fill up the background during the exhibition of individual performers. They correspond to the choras in the opera. In the drama, people are called figurantes, who figure without having to say any thing.

FILANGIERI, GAETANO, one of the most celebrated political writers of the eighteenth century, who contributed much to the progress of legislation, was born at Naples, Aug. 18, 1752. He was a son of Cesare, prince of Aranelli, and Marianna Montalto, daughter of the duke of Fragnito. His family was of Norman origin, and one of the most ancient in the kingdom. Filangieri was the third son and,
his father not being very opulent, he was destined to the military service, which he entered in his fourteenth year, but which he soon forsake. He devoted himself to study with such ardour, that, notwithstanding the neglect of his early education, at the age of twenty, he was well acquainted with the Greek and Latin languages, ancient and modern history, the law of nature and nations, and had also studied nearly all the branches of the liberal arts. He had already conceived the plan of two works, one on public and private education, and the other on the morality of princes, founded upon nature and the constitution of society. To gratify the wishes of his family, he commenced the practice of the law. His learning and eloquence so soon displayed him as a work against the favourable of the old system, he successfully defended the reforms suggested by the spirit of the age and by reason itself, which Tanucci, then (1774) prime minister of Naples, was carrying into execution. Tanucci immediately became his patron, and Filangieri was soon appointed to station of honour at the court, which did not, however, divert him from his favourite studies. He engaged in the preparation of a work which was to embrace the whole science of legislation; and, as the celebrated Beccaria, at Milan, had already published his essay on crimes and punishments, it seemed a new epoch in criminal legislation, Filangieri was appointed to illustrate the relations, and explain the fundamental principles of legislation in general. He executed this task with great depth of thought and soundness of judgment. He divided the work, La Scienza della Legislazione (The Science of Legislation), into seven books, of which the first, containing the general principles of legislation, and the second, treating of the principles of legislation in their application to political economy, appeared (1780) at Naples, in two vols. This work met with prodigious success, not only in Italy, but all over Europe; and the author, at the age of twenty-eight, was ranked among the most distinguished publicists. He speaks with boldness and independence of abuses; and, although he exposes those of his own government, the king conferred on him the commandery of the royal order of Constantine. In 1783, he published the two next volumes, on criminal jurisprudence. This subject he treated in its whole extent, and exposed the defects of the system. He then turned to the feudal system, and of the abuses in the church, excited the fears of the high nobility and clergy. A venal writer, one Joseph Grippa, was hired to refute Filangieri; and his work was also condemned by an ecclesiastical decree of Dec. 6, 1784, as tending to foster sedition and atheism. Filangieri did not answer the obscure Grippa, and his only reply to the feudalists and curialists was the publication of the fifth, sixth, and seventh volumes of his work, which treat of education, morals, and public instruction.

In 1783, Filangieri married Caroline von Frendel, daughter of a Hungarian nobleman, and governor of the second daughter of the king of Naples, and soon after retired, with the consent of his king, to a small town in the vicinity of Naples, to write, in the silence of the country, the last volume of his great work, which relates to religion as connected with the state. But his health had already suffered much, and he proceeded but slowly. The new king, Ferdinand IV., called him (1787) to his supreme council of finance. He was, therefore, compelled to return to Naples, and devote himself, almost exclusively, to his new duties. He soon after became sick, and died July 21, 1788, aged thirty-six. He had previously completed the eighth part of his work, on the religions that preceded Christianity. We find here profound researches and spirited descriptions. Of the last book, we have only the divisions of the chapters. This work has been translated into many living languages, and its publication has been celebrated. It appeared that he had intended to prepare a Nuova Scienza della Scienza, reducing all human sciences to first principles; and a Storia civile universale perpetua, in which, from the history of nations, the history of man was to have been explained, with all the progress of laws and society. His sudden death, and his opposition to the measures of the infamous Acton (q. v.), gave rise to a suspicion of poison. There is no proof, however, that this conjecture is well founded.

FILBERT; the fruit of the European hazel. See Hazel.

FILICAIA, VINCENZO DA; an Italian poet of the seventeenth century, who successfully opposed the torrent of bad taste, which was corrupting the poetry of his native country. He was born in 1642, at Florence, where he began his studies in the Jesuits' college, and afterwards studied at the university of Pisa. His first poetic attempts were directed to his mistress; but, deprived of the object of his love by her early death, he resolved never again to sing of a passion, the pleasures of which, he supposed, were vanished from him for ever, and determined to devote his lyre to sacred or heroic subjects. On his return to Florence, he became a member of the academy della Crusca, and soon after married the daughter of a senator, Scipio Capponi, with whom, after his father's death, he retired to the country, and devoted his whole attention to the education of his children, and the ease which he loved so well. In this retirement he wrote a great number of Italian and Latin poems; but, as his modesty led him to find more fault with them than did the few friends to whom he showed them, they remained unpublished; and he would, probably, have continued to conceal his splendid talents, had not his friends, at length, revealed the secret. Filicaia had celebrated, in six odes, the deliverance of Viena from the Turks, by John Sobieski, king of Poland, and the duke of Lorraine, and the entire defeat of the Turks, which happened soon after. These odes were so much admired, that the grand duke of Tuscany sent them to those princes. They were printed at Florence, in 1684, and Filicaia's fame was thus introduced to the first poet of his time in Italy. His fortune, however, was little improved by this accession of fame. Queen Christina of Sweden first interested herself in relieving the poet, appointed him a member of the academy of distinguished men which she had founded at Rome, and charged herself with the education of his two sons, on condition that it should not be made known, because she was ashamed to do so little for so distinguished a man. The attention of the grand duke of Tuscany was afterwards turned towards him, and one of his sons, who, however, soon died, was received into his service as page. He was then appointed by him senator and governor of Volterra, and afterwards of Pisa. In the discharge of these offices, he gained the love of the people and the esteem of the sovereign; and, notwithstanding the multiplicity of his occupations, he always found time to devote to his favourite studies. His advanced age, and the loss of several of his children, turned his whole thoughts to religious subjects. He undertook, however, the publication of a revised edition of his complete works, but died at Florence, Sept. 24, 1707, at the age of 65. His son Scipio published the collection begun by his father, under the title of Poetae Toscani di Vincenzo da Filicaia, and dedicated it to Cosmo III. Another edition, with the life of the poet, by Tommaso Bonaventura, appeared in 1720, and a third, in two volumes (Venice, 1762), which
the later editions have followed. Filicaia was particularly successful in the cannoni, and in some of his sonnets—that, for instance, which begins, Italia, Italia, a tu che fui la sorte. Dono infelice di bellezza, &c.—is one of the finest poems of the sort, and may sustain a comparison with the best lyric productions.

FILLAGREE WORK; a kind of ornamental work in gold or silver, wrought delicately, in the manner of little threads or grains, or of both intermixed. In Sumatra, manufactures of this kind are carried to very great perfection, though the tools made use of are very coarse and clumsy. The workmen melt the gold in a crucible of their own forming, and, instead of bellows, they blow with their mouths though a piece of bamboo. They draw and flatten the wire in a manner similar to that adopted by Europeans. It is then twisted, and thus a flower, or the shape of a flower, is formed. A pattern of the flowers or foliage is prepared on paper, of the size of the gold plate, on which the filagree is to be laid. According to this they begin to dispose on the plate the larger compartments of the foliage, for which they use plain flat wire, of a larger size, and fill them up with the leaves. A gelatinous substance is used to fix the work, and, after the leaves have been placed in order, and stuck on, bit by bit, a solder is prepared of gold filings and borax, moistened with water, to which they add a little of the substance; and after being put into the fire a short time, the whole becomes united. When the filagree is finished, it is cleansed with a solution of salt and alum in water. The Chinese make most of their filagree of silver, which looks very well, but has not the extraordinary delicacy of Malay work.

FILLET, in architecture, is a small square or flat moulding. See Architecture.

FILTRATION; the process by which a liquid is freed from solid bodies mixed with it, by passing it through a linen or woolen bag, or filtering paper, &c. A coarse-grained, porous kind of stone is also used for the filtering of water. It suffers the liquid to pass through, but retains the impurities which it contains. Such a stone is called a filtering stone. Other contrivances have been invented for purifying muddy, corrupt, and putrid water, and rendering it fit for drinking. Sand and charcoal are also used as filterings; but, if the fishes or other creatures of the water adhere to them, they must consequently be carefully washed from time to time. The largest filtering establishment is that in Paris, for the purpose of purifying the waters of the Seine. It deserves to be visited by every traveller.

FIN. Fishes are provided with certain members or appendages, whose use is to propel them rapidly through the fluid medium in which they live. These members are denominated fins, or pinnae, and consist of bony, cartilaginous or membranaceous rays, supported and held together by an interradial membrane, more or less vascular substance. In some kinds of fish, the thick skin which covers the body invests the fins also, rendering the presence of rays evident, only by trifling ridges, as in the shark and ray genus. Fishes, in general, possess five kinds of fins: 1st, those of the back, which are therefore denominated dorsal, varying in number from one to four, to which some authors also give the name of pinnae. Several small appendages which are seen in the mackerel. 2. The pectoral or breast fins are never more than two; the insertion is immediately in the rear of the gill, opening on the shoulder. In a state of rest, these fins are parallel with the body, and the apex towards the head. 3. The several fillets or pinnules, small appendages which are seen in the mackerel. 4. The anal fins are similarly situated. 5. The caudal or tail fin, placed on the extremity of the tail, and serving as the rudder by which the fish steers itself. By means of the dorsal, anal, and ventral fins, the body of the animal is sustained in a vertical position in the water, while the pectorals and caudals are used in propelling it forward; in which it is also aided by the action of the tail. Naturalists have ascribed the position of the fins to construct divisions in the class of fishes, and minor characters are drawn from the substance of the fins, whether soft, spiny, or both, as is the case in the majority of fishes. Articulating with points of the internal skeleton or frame-work, the fins possess great power. The muscles which move them are very strong, and, by a peculiar arrangement, they are enabled to erect the spines immovably at will, which is observed when the fishes are taken by the hook. Sometimes spines occur separate and unconnected with the fin, as in the gas-trosteus, or stickle-back, a small fish not uncommon in running streams. Severe wounds are inflicted by the spiny processes of the fins of fish, and poisonous effects are attributed to many of them, although without any foundation; and for the same reason, and a few others, the dangerous wounds which have been received by incautious fishermen, abundantly testify to the serious effects of a venomous fluid, secreted by the skin. A curious development of the dorsal occurs in the echidna, and a peculiar species of sword-fish, while in the eels, or flying-fish, the pectorals are enlarged sufficiently to serve as wings, by which the animal sustains itself for several seconds in the air. In the suckers, or cyprinopleurus, the ventral fins are united in a circular disc, or sucker, by which the fish attaches itself to rocks very firmly. Perhaps the most singular use to which the whole set of fins is applied, occurs in the climbing perch, a fish, which, in the most extraordinary manner, leaves its native element, and, by means of the spinous portion of its fins, absolutely ascends the trunks of trees several feet, and conceals itself in the collections of water at the base of the leaves of certain palm trees. In colour and form, the various species of fishes exhibit a great variety, affording excellent characters for distinguishing the species. For the arrangement depending on their number and position, see Ichthymology.

FINALE; the concluding part of a musical composition; for instance, of a quartetto, of a symphony, of any act of an opera, of a ballet, &c. It consists of compositions of various characters. The finale, in instrumental pieces, has mostly a character of vivacity, and requires a quick movement and lively performance. In the opera, the finale mostly consists of a series of compositions for many voices, and of different characters and different time and movement.

FINANCE. See Revenue, Political Economy, and Taxes.

FINCH. This numerous class of birds embraces not only some of the most beautiful, but also the most agreeable of the feathered tribe. It forms the genus Fringilla of Linnaeus, which has since been much subdivided into other genera, such as Emberiza, &c.

Among the most celebrated is the goldfinch (F. carduelis). This is the most esteemed of the hard-billed birds for the colours of its plumage, the elegance of its form, and the harmony of its notes. The bill is white, tipped with black, and surrounded, at the base and round the ringlets, of small black or white feathers. The head is covered with large spots of black and white; the back, rump, and breast are of a pale, tawny
brown. When the wings are folded, they display a row of white spots, finely contrasted with the black ground on which they are placed. These are the tips of the wing feathers, which terminate in white.

This bird is a native of Europe, where it remains during the winter. It begins, it warbling about the beginning of March, and continues melodiously throughout the whole month. They assemble in large flocks, and feeds upon seeds of different kinds, particularly those of the thistle. It prefers orchards as a residence. The nest is an intricate but beautiful structure, the outside being composed of moss, lichen, and coarse grass, lined with hair, wool, and feathers. In the sub-genus, one of which sometimes pair with the canary. The females lay five white eggs, marked with spots of a deep purple colour at the larger end. They feed their young with caterpillars and insects. When kept in a cage, they will sing the greatest part of the year. In a state of confinement, they become verydocile, and can be taught a variety of little tricks.

The canary bird (F. canaria) is the most remarkable and melodious of the finch tribe; and, next to the nightingale, has been most celebrated for its musical powers. In a wild state, it is chiefly found in the Canary Islands, but has become so common in a state of captivity, that its native habits and country have been almost forgotten. It is uncertain at what period these birds were introduced into Europe, but probably not till about the fourteenth century. Belon, who wrote in the sixteenth, makes no mention of it. Gesner and Aldrovandus speak of them as so great rarities, that they could only be purchased by people of high rank. They are now bred in great numbers, and have become so common that they are of little comparative value. Buffon enumerates twenty varieties; and many more might probably be added to the list, were all the changes incident to a state of domestication carefully noted. In their native state, they are of a dull, uniform green, and exhibit none of that richness and variety which are so much admired in the tame ones. Like the rest of the finch tribe, they have a high, piercing note, which they continue for some time, in one key, without intermission, then raise it higher and higher by degrees. This note is improved by education, and, in this form, is still more reared than the others, and continuing its song much longer, has had much attention paid to it. Numbers of treaties have been written on the rearing and education of these birds, which we have not space to notice. The Tyrolean canary, from whence the rest of Europe is principally supplied, the apparatus for breeding canaries is both large and expensive. A large building is erected for them, with a square space at each end, and holes communicating with these spaces. In these outlets are planted such trees as the birds prefer. The bottom is strewn with sand, on which is cast rape-seed, chickweed, and such other food as they like. Throughout the inner compartment, which is kept dark, are placed brooms for the birds to build in, care being taken that the breeding birds are guarded from the intrusions of the rest. Four Tyrolean usually bring over to England about sixteen hundred of these birds; and, though they carry them on their backs, nearly 1000 miles, and pay twenty pounds for them originally, they can sell them at five shillings each.

Laintez (F. lanarius). This plain but melodious little bird is common to all parts of Europe. It is about five inches and a half in length, of a dark reddish-brown colour on the upper parts, and a dirty reddish-white beneath. It builds its nest in low bushes: the outside is made of dried grass, roots, and moss, lined with hair and wool. The female lays four or five eggs, of a pale blue colour, spotted with brown at the larger end, and generally breeds twice in the year. The song of the linnet is sweet and varied; its manners are gentle and docile; it easily adopts the song of other birds, when confided with them, and, in some instances, has been taught to certain words. It is frequently found in large flocks, and, during winter, feeds on various kinds of seeds, but more particularly on the linseed, from which circumstance it derives its name. There are a great number of the finch tribe, natives of America, which have been arranged, by the Prince of Lichtenstein, in the sub-genus, F. fringilla, and coccothraustes, containing twenty-nine species, among which the F. cyanoe, or indigo, bird, F. melodius, or song-sparrow, F. hynamalis, or snow-bird (q. v.), and F. tristis, or yellow-bird (q. v.), are best known. The latter sub-genus includes the grosbeaks. (q. v.)

FINCH, HENNAE, first earl of Nottingham, was the son of Hennage Finch, recorder of the city of London, a descendant of the Wincheston family. He was born in 1621, and was educated at Westminster school, and Christ Church, Oxford, whence he was removed to the Inner Temple, under the care of Charles II., his reputation as a lawyer raised him to the post of solicitor-general, in which capacity he signalized his zeal in the prosecution of the regicides. In 1661, he was elected member for the university of Oxford, and obtained a baronetcy, and, six years afterwards, took a prominent part in the impeachment of the earl of Clarendon. In 1670, he became attorney-general, and, in 1673, succeeded the earl of Shaftesbury as lord-keeper. This latter appointment was only a step towards the chancellors, which he attained two years afterwards. In 1681, his services were rewarded with the earldom of Nottingham. He survived his elevation, however, little more than a year. His powers, as an orator, were highly rated, and Dryden has handed down to posterity his portrait, in Absalom and Achitophel, under the character of Amri. Several of his speeches, on the trials of the judges of Charles I., have been published, as have also some of his parliamentary orations; but some valuable chancery reports of his remain in manuscript.

FINE ARTS. See Arts, and the different articles on the various branches of the fine arts. Also the Dissertation prefixed to this work on the progress of the fine arts, by Allan Cunningham, Esq.

FINCH, Lord, (or Emmanuel,) as represented in the poems which bear the name of Ossian, was the father of this poet. (See Ossian.) He was prince of Morven, a province of ancient Caledonia, born, according to the Irish annals, in 282. The poems of Ossian fix the time of his birth a few years later. The extent of his dominions is not to be determined, as hunting was probably the chief occupation of his tribe. His principal residence was at Selma, in the neighbourhood of Glencoe. The fact that, in all parts of the Highlands, we find buildings, caves, &c., which bear his name, may be attributed to his leading the wandering life of a hunter; and when his name once became distinguished, it was given to many remarkable objects which he may have visited. He constantly struggled with the Romans, who then ruled as conquerors in England. He entered their provinces, and carried home the wine and wax of the foreigners. That the Roman Carvien, mentioned by Ossian, is Carvien, is notwithstanding the authority of Gibbon, Whittaker, and Macpherson, very improbable. He frequently made expeditions to Sweden, the Orkney islands, and Ireland. Ossian calls these places Lochlin, Inisitore, and Utlin. These expedi-
tions are celebrated in the two remaining poems of Ossian, Fingal, and Temora. In the latter, the hero appears with his grandson Oscar, the son of Ossian, Osten, and it, disposing of the particular circumstances. Fingal's character, as sketched by Ossian's poem, is that of a noble hero, the father of his people; he spares the weak, and protects the poor. Fingal was also a poet.

FINGAL'S CAVE; a cavern supported by basaltic columns, in the island of Staffa, one of the Hebrides. It is one of the most remarkable natural curiosities; is 227 feet long, 166 feet high, and 40 feet wide. The floor is formed by the waters of the sea, which never ebbs entirely out, and is deep enough for boats. On all sides rise regular columns of basalt, some entire, some broken, the lases of which compose and support the vault. The water, trickling down in the interior of the cave from the rocks, produces harmonious sounds.

FINGER-BOARD; that thin, black covering of wood, laid over the neck of a violin, violoncello, &c., and on which, in performance, the strings are pressed by the fingers of the left hand, while the right manages the bow.

FINGERING; disposing of the fingers in a convenient, natural, and apt manner in the performance of any instrument, but more especially the organ and piano-forte. Good fingerimg is one of the first things to which a judicious master attends. It is, indeed, to this that the pupil must look as the means for acquiring a facile and graceful execution, and the power of giving passages with articulation, accent, and expression. Easy passages may be rendered difficult, and difficult ones impracticable, by bad fingering; and though there are many arrangements of notes which admit of various fingering, still, even in these, there is always one best way of disposing of the hand, either with regard to the notes themselves, or those which precede or follow them. But there are an infinite number of possible dispositions of notes, which can only be fingered in one particular way; and every attempt at any other is but endangering the establishment of some awkwardness, which the practitioner will have to unlern before he can hope to attain the true fingering. Hence it is obvious, that no qualification requisite to good performance is of more importance to the learner than that of just fingering, and that, whatever talents, and assiduity may be able to achieve, independent of instruction, in this great particular, the directions of a skilful master are indispensable.

FINIGUERRA, TOMMASO (by contraction, Moso); a celebrated sculptor and goldsmith, to whom is ascribed the invention of copper-plate printing. He lived at Florence, about the middle of the fifteenth century. The year of his birth and that of his death are unknown. His family had flourished in that city since 1213. He was a scholar of Lorenzo Ghiberti, who sculptured the famous bronze doors of the baptistery of St John the Baptist, at Florence. He seems to have been himself engaged in the second, which was begun in 1425, and completed in 1445. He was distinguished in the art called niello. This art, which ceased to be cultivated in the time of Leo X., consisted in engraving dark metallic substances, called in Latin nigellum, into cavities worked on gold or silver, and fusing them by fusion. Many have regarded the German painter Martin Schon as the inventor of copper-plate printing; but this painter made no impressions till after 1400. Peace, executed in niello, by Finiguerra, in 1452, and the Crownings of the Virgin, are still to be seen in the church of St John at Florence. The drawing of the latter is natural and correct, and not destitute of elevation. He also executed a great part of the bas-reliefs in silver, on an altar, which is still used on great festivals in the church just named. Of his works in niello, Finiguerra is not known with certainty to have made impressions except in sulphur. Zani, however, found an impression of the plate of the Coronation in St John's church, preserved in the cabinet national at Paris, and this is the only reason for attributing to him the invention of copperplate printing. Some account of Finiguerra's invention is given in the work of the abbot Zani, Materiali per servire alla Storia dell' Origine e de' Progressi della Incisione in Rame ed in Legno, Parma, 1802; also Bartsch's Peintre-Graveur, 13th vol.) Designs by Finiguerra in aquarell are also preserved in the Florentine gallery.

FINISTERRE, or FINISTERRE; a department of France; part of Lower Brittany. See Department.

FINISTERRE, cape: the most western cape of Spain, on the coast of Galicia, 42° 54' N. lat.; 13° 50' 36" W. lon. The highest peak of the mountain, of which the cape forms a part, is 1917 feet above the sea; it may be seen seventeen leagues out at sea. The Romans called it Finis Terrae; also Artabrum, from the Artarbi, the tribe which they found there.

FINLAND; a Russian grand principality, containing 135,600 square miles, and 1,375,600 inhabitants, and divided into twelve circles. It consists of three parts: 1. that part of Finland ceded by Sweden to Russia by the peace of Abo in 1743, and by the peace of Nystadt, in 1721; 2. that part which was ceded by Sweden at the peace of Fredericksham, in 1809, including all the rest of Swedish Finland; and, 3. that part of East Bothnia and Lapland, ceded by the same peace. The grand principality of Finland was constituted August 6, 1809. The administration is entirely different from that of the other Russian provinces. A governor-general, with fourteen counsellors, all Finns, is at the head of the government. Since 1826, the affairs of Finland have been managed at St Petersburg, by a separate department of state. The capital is Helsingfors, to which the highest authority, the senate and council, was transferred from Abo, October 1, 1819. It has 5000 inhabitants, and considerable commerce, and is defended by the fortress of Sweaborg. The country, in some parts, is mountainous and rocky, being traversed by the continuations of the Scandinavian mountains, and, in others, is sandy, marshy, and abounding in lakes. The Kymmene is the most important river. Though so great a portion of the soil is unfit for agriculture, some parts are fertile in grain, potatoes, and flax, and good for grazing. The woods abound in bears and wolves, and the lakes are full of fish. Hunting and fishing are the chief occupations of many of the Finns.

The following cut represents the costume of Fin- land boors:—
FINNS—FIRE.

The population is densest on the coasts; the interior of this extensive country is very thinly peopled; some parts are without inhabitants, and some are incapable of supporting a dense population, on account of the extreme cold. The strong fortresses of Finland render it very important for Russia. The inhabitants are chiefly Finns, with a few Russians, Germans, and Swedes.

FINNS. This race of men, about 2,400,000 in number, extending from the Scandinavian peninsula, along the northern coast of Europe, far into the north of Asia, thence to the Wolga and the Caspian sea, is an object of interest. They were first acquainted with a race called Feendi, whose favourite residence was the woods and morasses of the north. They called themselves the inhabitants of the morasses (in their language Suomalanen), and their principal occupation was hunting and fishing. It is worthy of remark, that the scattered Finnish tribes have always retained the national physiognomy, character, language, and manners to such a degree as to be easily recognised. They have no independent history. In their simple, wandering life, they were the easy prey of the Norwegians, Swedes, and Russians. The Norwegian first conquered Finland. When extending its expeditions against the Pernians, a tribe of Finns on the White sea, continued till the princes of Novgorod had made themselves masters of Pernia and the trade thither, and the Norwegians themselves were occupied with the incursions of the Mongols. The Russians next began to extend their authority in the territory of the Finns; Karelia and all Perlia fell under their power, and, in the fourteenth century, the natives saw the cross erected on the shores of the White sea, by bishop Stephen, and the shining temple of the great god Ionala destroyed. All Lapmark, and the Finns in the east, on the Wolga and in Siberia, were reduced by the Russians, who also drove back the Norwegians, when the latter attempted to maintain their earlier encroachments in Lapmark. Last of all, the Swedes attacked the Finns residing on their borders. In the middle of the twelfth century, St. Eric converted the inhabitants of the present Finland, and, a century later, the Swedes subdued Finland, and also the parts of Karelia and Lapland not belonging to Russia. The subjugation of the Finnish tribes in the north was now complete; twelve tribes, wholly or in part, became subjects of Russia,—the Laplanders, Finns, Esthonians, Livonians, Tschere-misses, Batschmen, Vogules, Tartars, Siryanes, Tschuvasches, and Osticks of the Obi. To these may be added the Tepteri, consisting of several Finnish tribes, principally the Tscheremisses, Tschuvasches and Mordvinas, and some Tartars. The Finns are of a small size, but robust. They are characterized by a flat countenance, wide sunken cheeks, dark-gray eyes, a thin beard, brownish yellow hair, and a swarthy complexion. This description is not universally applicable, however, as the Finns have been much improved by cultivation; yet the general characteristics of their physiognomy remain unchanged. The Tscheremisses and Tschuvasches, in their bodily structure, are more like the Tartars; but the Mordvinas are more like the Russians, and the Vogules like the Calkmuns. The Finns are principally Christians, and profess either Lutheranism or the religion of the Greek church. But among the Tscheremisses, Mordvinas, Tartars, and Vogules there is a certain hereditary and religious profession Shammism. A part of the Finns are engaged in agriculture, and have attained a certain degree of refinement, particularly the Finns, properly so called; another portion of them lead a wandering life, supporting themselves by the breeding of cattle, hunting, and fishing. Flibblesness and indolence are characteristics of a large number of the Finnish tribe. The Finns, in a narrower sense, are a grave, laborious, industrious people, mired to every hardship; fearless, brave, firm, but self-willed and obstinate; they are, withal, very kind and hospitable. They are not wanting in intelligence, and are very fond of poetry and music. A Finnish Grammar has been written by Strahmann.

FIORD, the end of several Danish and Swedish geographical names, means an arm of the sea, a narrow strait, a firth.

FIRE-TREE. See Pine.

FIRES. The continuing energy of fire, the first and most important agent of civilization, the similarity of its effects to those of the sun, its intimate connexion with light, its terrible and yet beneficent power, the beauty of the constantly changing flame, its many colours and shapes,—easily explain how it happened that, in times when cause and effect, form and essence, were not yet distinctly separated, fire became an object of religious veneration, a distinguished element in mythology, an expressive symbol in poetry, and an important agent in the systems of cosmogony. It obtained a place among the elements, and was for a long time considered to be a constituent part of the composition of all bodies, and to require only the concurrence of favourable circumstances to develop its activity. It was early thought that fire showed itself in its elementary form in electrical phenomena. At a later period, it was believed to be the source of all chemical action, and, as such, was called phlogistique. It was finally confounded with light, and became, as it were, the principal agent of the universe.—

Ignis ubique latet, naturam amplexit ornamen, Cometa partis, renovat, dividit, unit et aliut.

Those agents, differing in their qualities from other bodies, and sometimes called imponderable agents, under whatever light they may be viewed, open a vast field for speculation; and it is not surprising that some philosophers should have seen only different modifications of the same matter, where others have thought to recognize the influence of different kinds of matter; thus the effects of fire have been attributed to a vibratory motion of the particles of matter, or to the undulations of ether. When natural philosophy was practiced in the schools, theories were adopted to which little attention is paid in the present age. There is still science in these conjectures and observations. Caloric, be it a material agent or the consequence of vibratory motion, is at present considered the cause of the phenomena which were formerly ascribed to fire. Nevertheless, the nature of the one is as unknown to us as that of the other was to the ancients. The substitution of one of these terms for the other has, however, introduced a greater precision of language, and cause and effect are no longer confounded under the same name. See Caloric, and Combustion.

The word fire, with different epithets, or ignis (Latin), has been used for the spontaneous or casual combustion of gaseous substances. Such is the ignis fatuus, the jack-with-the-lantern, or will-with-the-wisp, observed in places where animal matter is in a state of putrefaction. Such are also the exhalations, called fire-damps (see Damps), which are frequently seen in coal mines in the form of whitish flakes, and produce terrible explosions, which may be prevented by currents of air, or more completely by Sir Humphry Davy's safety-lamp, explained under Damps. The former phenomenon is attributed to phosphureted hydrogen gas, which takes fire on exposure to the atmosphere, and the latter to carbonised hydro-
FIRE-ARMS.—FIRE ENGINES.

FIRE-ARMS. Under this designation are comprised all sorts of guns, fowling-pieces, blunderbusses, pistols, &c., which effect their discharge by the combustion of gunpowder. The manufacture of these weapons in England is extensive, employing at all times, but especially during war, a large number of persons. In consequence of the frequent accidents from the bursting of insufficient barrels, the legislature of Great Britain has very properly interfered, not to regulate their manufacture, but to prevent all persons from using or selling barrels that have not been regularly proved in a public proof-house. The first act for this purpose passed in 1812; but it was soon after superseded by a fuller and more complete one, the 55 Geo. III. c. 59. This statute imposes a fine of twenty pounds on any person using, in any of the progressive stages of its manufacture, any barrel, not duly proved; on any person delivering the same, except through a proof-house; and on any person receiving, for the purpose of making guns, &c., any barrels which have not passed through a proof-house. These penalties to be levied on conviction before two justices; with like penalties, to be similarly levied, on persons counterfeiting the proof-marks.—For the manufacture of fire-arms, &c., see Iron Manufacturers.

FIRE-BALLS: 1. In natural philosophy, globular masses of fire, of different magnitudes, moving through the atmosphere with greater or less velocity, often with burning tails, when they are called fiery serpents. Small balls of this sort are called shooting stars. There are various conjectures in regard to the nature of these phenomena. Chladni considers them to be solid masses, formed above the region of our atmosphere, and classed them with aerolites or meteoric stones. (q. v.)—2. In gunnery, every ball which is capable of being ignited and burned. In military operations, those balls are thrown by night from mortars or howitzers towards quarters which it is desirable to examine.

FIRE-DAMP. See Damps.

FIRE-DRESS: A new invention of the chevalier Aldini, which is stated to be an effectual protection against fire, in the reports of committees of the highest respectability appointed to examine it at Paris. It enables the wearer (as has been demonstrated by public experiments) to approach with impunity, or even to pass through a fierce flame, to rescue lives or portable valuable property, or to use means for the extinction of fire. It consists of an exterior light armour of metallic gauze, which fabric was discovered by Sir Humphrey Davy to be imperious to flame (see Damps), and of an inner covering of a material which is a slow conductor of heat. Amongst flexible fibrous substances capable of being spun and woven into tissues, the asbestos possesses pre-eminently the property of slowly conducting heat; but the other fibrous matters in common use for the purposes of clothing, such as wool, cotton, &c., may, by immersion in certain saline solutions, be rendered very imperfect conductors, so as to fit them very sufficiently for preventing the transmission of injurious heat to the body, during a temporary exposure of some minutes to the action of flame on the outward covering of wire gauze. See the London Register of Arts for June, 1830.

FIRE ENGINES are a species of forcing pumps, in which the water is subjected to pressure sufficiently strong to raise it to the required height. (See Pumps.) But, in order to remedy the intermission of the jets of the simple forcing pump, and produce the discharge of a continuous stream, a vessel, filled with air, is attached to the engine. The water is forced into this vessel by two forcing pumps, and the air therein contained being condensed, reacts on the water with a power proportioned to the condensation. The spouting-pipe for directing the water upon the fire proceeds from the common air vessel. The handles are so disposed, that, while the piston of the one pump is up, that of the other is down; and they are elongated for the purpose of enabling a great number of men to work them at the same time, so that they may throw a large quantity of water. In New sham’s engines, two cylinders, constructed like forcing pumps, are worked by the reciprocating motions of transverse levers, to which the handles are attached. In this way the water is forced into the air vessel, from which it afterwards spouts through a movable pipe. The accompanying engraving is a perspective representation of Newsham’s fire engine.
small wheels. The hind axle-tree is fastened across under the bottom of the cistern; but the fore axle-tree is put on a strong pin or bolt, strongly fastened in a horizontal situation in the middle of the front of the engine, by a strong horizontal bolt, M; on which two fore-wheels and the axle-tree have a circular motion round the bolt, so that the engine may stand as firm on rough or sloping ground as if it were level. Upon the ground next to the hind part of the engine may be seen a leather pipe, P, one end of which may be turned out as a typanum of the jet. The other end is immersed in water, supplied by a pond, fire-plug, &c., and the pipe becomes a sucking-pipe for furnishing the pump of the engine by its working, without pouring water into the cistern. To the hind part of the cistern is furnished a wooden trough, G, with a copper grate for keeping out stones, sand, and dirt; through which the cistern is supplied with water when the sucking-pipe cannot be used. The fore part of the cistern is also separated from the rest of its cavity by another copper grate, through which water may pass out slowly, to the advantage of those who work the pumps of this engine move the handles visible at the long sides, up and down, and are assisted by others who stand on two suspended treadles, throwing their weight alternately upon each of them, and keeping themselves steady, by taking hold of two round horizontal rails, L, framed into four vertical stands which reach the bottom of the cistern, and are well secured to its sides. Over the hind trough there is an iron handle, or key, at K, serving to open or shut a cock placed under it on the bottom of the cistern. L is an inverted pyramidal case, which preserves the pumps and air vessels from damage, and also supports a copper pipe, P, which is placed between the man, who, by raising or depressing, and turning about the spout, which is made to screw to the pipe at M, directs the stream of water at occasion requires. This spout is made of two pieces of brass-pipe, each of which has an elbow; the lower is screwed over the upper end of the pipe that goes through the air-vessel, and the upper part screws on to the lower by a screw of several threads, so truly turned as to be water-tight in every direction. The conic form of the spouting-pipe serves for wide-drawing the water in its passage through it, which occasions a friction that produces such a velocity of the jet as to render it capable of breaking windows, &c., whilst the valves and leather pipes of the engine have sufficient water-way to supply the jet in its greatest velocity.—Leather pipes, or hose, of considerable length, may be screwed at one end of the nozzle of the engine, and furnished at one end with a wooden or brass pipe for guiding the water into the inner parts of houses. Between the pyramidal box, L, and the fore end of the engine, there is a strong iron bar, O, lying in an horizontal position over the middle of the cistern, and playing in brasses supported by two wooden stands; one of which stands between the two fore stands of the upper rails, and the other is hid in the enclosure over the hind part. Upon proper squares of this bar are fitted, one near each end, two strong brass bars, which take hold of the long wooden cylindrical handles, by means of which the engine is worked; and the treadles by which they are assisted are suspended at each end by chains, in the form of a watch-chain, and receive their motion jointly with the handles that are on the same side, by means of two circular sectors of iron, fastened together, and fixed by proper squares of the middle handles. As soon as the engine is set in motion at one end, the two hind ones differ from the former only in thickness, for the fore sectors are made to carry only one chain each, fastened by one end to their upper part, and by the lower end to the treads; whereas the sole of the two hind sectors is wide enough to carry two chains each; one set fastened, like those of the fore ones, for the motion of the treads; and the other two set perpendicularly in a horizontal line to the lower part of these sectors, and by their upper ends of the top to the piston-bars, in order to give them motion.

In some engines, a single cylinder is used, the piston rod passing through a tight collar, and alternately expelling and taking in the air of the cylinder. In Rowntree's engine, and some others, a part of the inside of a cylinder is traversed by a partition like a door hinged upon the axis of the cylinder, which drives the water successively from each side of the cylinder into the air vessel.

Braithwaite's Steam Fire Engine, a recent invention, is an ingenious application of the moving power of steam to the working of fire engines. The mechanical arrangement consists of two cylinders, the one of seven inches diameter, being the steam cylinder, and the other of six and a half inches diameter, being the water cylinder. The motion of the upper part of the cylinders the parallel motion is easily produced. The boiler's on the construction and principle of Braithwaite and Ericson's patent steam generator. This engine will deliver about 9000 gallons an hour to a height of ninety feet, through an adjacent drum. The time of getting the machine into action, from the moment of igniting the fuel (the water being cold), is eighteen minutes. As soon as an alarm is given, the fire is kindled; and the bellows, attached to the engine, are worked by hand. When the horses are harnessed in, the fuel is thoroughly ignited, and the bellows are then worked by the motion of the wheels of the engine. The time of arriving at the fire, preparing the horses, &c., the steam is ready. The expense of fuel is stated to be at London sixpence per hour.

FIRE-FLY; a small beetle which emits a beautiful phosphoric light from the under surface of the terminal segments of the abdomen. In America, during the summer months, these little insects abound, and are observed to be particularly active and luminous after slight showers of rain, studding the trees and grass with their pale lights. Among naturalists, the fire-fly is included among the species of lampyris. The phosphoric light expelling by these animals, is of a greenish yellow, and proceeds from a collection of yellowish matter under the tail, which is kindled or extinguished at pleasure. When separated from the body of the insect, it continues to shine for some time, but, gradually becoming paler, is at length extinguished. This curious pugnacious nature is said to be for the purpose of directing the sexes to each other. In Europe, the fire-fly is replaced by the glow-worm, a wingless female insect of this genus. The male is not luminous, and is guided to his mate by the light which she emits from a receptacle of phosphoric matter similar to that with which the American species is provided.

FIRE, GREEK, was invented in the seventh century. When the Arabs besieged Constantinople in 608, the Greek architect Callinicus of Helopolis deserted from the caliph to the Greeks, and took with him a composition, which, by its wonderful effects, struck terror into the enemy, and forced them to take to flight. Sometimes it was wrapped in flax attached to arrows and javelins, and so thrown into the fortifications and other buildings of the enemy, to set them on fire. At other times, it was used in throwing stones, and driven at men at arms against the enemy. The use of this fire continued at least until the end of the thirteenth century; but no contemporary writer has handed down to us any
accurate account of its composition. To judge from its effects, neither naptha, sulphur, nor rosin were principal ingredients; but saltpetre probably was. It is not improbable that the ancients knew that it burned under water, as has been supposed, but merely that it burned upon it. Cardan invented a species of fire of this description. According to a notice in the Magazin der Erfindungen (Magazine of Discoveries), the baron Von Aretin of Munich has discovered a Liquid of the thirteenth century, in the central library in that city, a dissertation on the Greek fire, which contains the receipt for its composition, so long supposed to be lost.

FIRE MARBLE. See Marble.

FIRE ORDEAL. See Ordal.

FIRE-PLACE. We often see old fire-places of an enormous size, capable of containing seats, and having the sides at right angles with the back, which is perpendicular. This construction was attended with very great loss of heat, as the size of the mouth occasioned a great current of air up the chimney, and, consequently, into the room; and almost all the radiated and conducted heat were carried off. The application of modern practical science to the comfort of common life has been of the greatest benefit in this respect. It is advantageous to make the perpendicular height of the fuel as great as is consistent with safety. A stratum of coals or ignited wood with its length into the lower part of the room, if placed vertically, than if laid horizontally. The fuel should also be so divided as to be easy of ignition, and so placed as to give free access of the air to all its parts, as the smoke is then more likely to be burnt. Franklin's stoves are cast-iron fire-places, into which, when erected according to the inventor's directions, are a very economical contrivance. Most of the articles, however, now sold under this name, are very different from the original plan. Underneath and behind the fire-place is an air chamber, into which the air is admitted from without the house by an opening through the wall, and which is discharged into the apartment by lateral openings, after being heated by contact with the fire-place. The smoke, being carried off by a circumferential flue, which passes upward to the top of the fire-place, and then descends to the floor, also parts with much of its heat before it escapes by the main chimney. The Rumford fire-place has an air chamber, of a very narrow throat to the chimney, for the purpose of diminishing the current of air, an advanced back to throw the fire further forward, and oblique sides (at an angle of about 135 degrees with the back), which radiate the heat more completely into the room. The double fire-place is an ingenious modification of a Franklin stove. It is formed by setting a soap-stone fire-place into the chimney, leaving an air chamber, as in the Franklin stove, behind and beneath it, which communicates with the external air, and opens into the apartment. This fire-place is so constructed, as to unite the advantages of the Rumford fire-place with those of a Franklin stove. The air to be heated should be taken from without the house; for if taken from an entry or cellar, the temperature of those places would be very much reduced. The air chamber should be from four to seven inches in diameter, as more heat will be conducted from the stops, and a greater quantity of very moderately heated is better than a small quantity made very hot, which is apt to render the air of the apartment disagreeable.

See grate, Stove, Furnace.

FIRE-SHIPS are generally old vessels filled with combustibles, fitted with grappling-irons, to hook on ships, and set them on fire. The following is a description of the fire-ships on the coast of Turkey: "The vessels usually employed for this service," says Mr Emerson, "are old ships, purchased by the government. Their construction, as fire-ships, is very simple. They are armed with a few guns, and provisioned for active combustion. For this purpose, the ribs, hold, and sides of the vessel, after being well tarred, are lined with dried furze, dipped in pitch and lees of oil, and sprinkled with sulphur; a number of hatchways are then cut along the deck, and under each is placed a limited stock of gunpowder. At the moment of conflagration, each throws off its respective hatch, and, giving ample vent to the flames, prevents the deck being too soon destroyed by the explosion. A train, which passes through every part of the ship, and communicates with every barred, running round the deck, and passing out at the steerage window, completes the preparation below; whilst above, every rope and yard is well covered with tar, so as speedily to convey the flames to the masts; and at the extremity of each yard-arm is attached a wicker hook, which, being once entangled with the enemy's rigging, renders escape, after coming in contact, quite impossible. The train, to prevent accidents, is never laid till the moment of using it; when, all being placed in order, and the wind favourable, with every possible sail set, so as to increase the flames, she bears down upon the enemy's line, whilst the crew, usually twenty-five or thirty in number, is not on duty; and the ship, churning behind the after-bulwarks, when close upon the destined ship, all hands descend by the stern into a launch fitted out for the purpose, with high gunwales and a pair of small swivels; and at the moment of contact, the train is fired by the captain, and, every hatch being thrown off, the flames burst forth, at the same instant, from stern to stern; and, ascending by the turreted ropes and sails, soon communicate with the rigging of the enemy's vessel, who have never yet, in one instance, been able to extricate themselves. In fact, such is the terror with which they have inspired the Turks, that they seldom make the slightest resistance. On the distant approach of the fire-ship, they maintain, for some minutes, an incessant random cannonade; but, at length, long before she comes in contact, precipitate themselves into the sea, and attempt to reach the other vessels, scarcely one remaining to the last moment of her destruction. At other times, however, armed boats are sent off from the other vessels of the fleet; but they have never yet been able, either to prevent the approach of the fire-ship, or seize on the crew whilst making their escape; and, though fire-ships are, in other countries, considered a forlorn hope, such is the stupidity and terror of the Turks, that it is rarely that one of the brulottiers is wounded, and very seldom indeed that any lose their lives. The service, however, from the risk to which it is exposed, is rewarded with higher pay than the ordinary seamen; and, on every occasion of their success, each brulottier receives an additional premium of 100 or 150 pisters."
which prevailed more particularly among the Persians. See Gueber or Gheber.

FIRENZUOLA. See Nannini.

FIRMAMENT, in the Ptolemaic astronomy; the eighth heaven or sphere, with respect to the seven spheres of the planets which it surrounds: It is supposed to have two motions, a diurnal motion, given to it by the primus mobile, from east to west, about the poles of the ecliptic; and another opposed motion from west to east which last it finishes, according to Tycho, in 25,800 years; according to Ptolemy, in 36,000; and according to Copernicus, in 25,800; in which time the fixed stars return to the same points in which they were at the beginning. This period is called the Platonic or great year.

FIRMARIA, 1. among the Turks, an order with the grand vizard issues in the name of the sultan; 2. in the East Indies, a written permission to trade. See Turkey.

FIRST FRUITS and TENTHIS, in law. First fruits are the profits of every spiritual living for one year; and tenths are the tenth of the yearly value of such living, given anciently to the pope, throughout every Fiscus, or monastery, in England, by stat. 27 Henry VIII., c. 3, transferred to the king. By stat. 27 Henry VIII., c. 3, no tenths are to be paid for the first year, as then the first fruits are due; and, by several statutes in the reign of queen Anne, benefits under £50 per annum shall be discharged of the payment of first fruits, and of fiscals. She also restored the profits of this revenue to the church, by establishing a perpetual fund therefrom, vested in trustees, for the augmentation of poor livings under £50 a year. This is called queen Anne's bounty, and is further regulated by subsequent statutes; but, as the number of livings under £50 was, at the commencement of it, 5597, averaged at £25 per annum, its operation will be very slow.

FISC. Fiscus signifies, in the Roman law, the private treasury of the emperor, as distinguished from the public treasury (the aravorium publicum). In modern law, on the European continent, fiscus denotes the public treasury, and the private treasury of the monarch is called chatouille. Fiscus is particularly used for the public treasury, when considered in a legal point of view; for instance, as entitled to all fines, or goods without an owner, or which are forfeited by the owner, &c.; or when we speak of fensibly or fisably. The fiscal right, that is, the right of having a fiscus with these privileges, appertains only to the general government, but is often conferred on cities, universities, provinces, corporations, &c. In Germany, when an individual brings an action against the state or sovereign, the form of the action is, "A B vs. the Fiscus." FISCAL, from fiscus (q.v.); in most German states, an officer who represents the government before the courts of justice, corresponding to the French ministere public, and the solicitor and attorney-general in England. In the ancient German empire, there were imperial fiscals, whose duty it was to expound and apply the laws of the empire; for instance, abuses of the right of coinage, disturbances of the public peace, &c.

FISCHART, John, also called Mentzer, and, in his different works, by other names, was born, according to some, at Mentz, from which they derive the name of Mentzer; according to others, at Strasburg. He became doctor of laws, and, about 1586, was bailiff of Forbach, near Saarbruck. He died before 1591. Little is known of his life, and there is much which is unintelligible in his writings; they are mostly satirical, partly in prose, partly in verse, partly of both mixed together, and here and there, the most whimsical tides. As according to a report ancient, he is the most restrained of his age, inexhaustible in droll, humorous, and witty thoughts, not seldom guilty of equivocation and obscurity, intimately acquainted with the follies of his age, and never at a loss whether to ridicule or lash them. He treats the German language with the greatest freedom, coining new words and turns of expression, without any regard to analogy, and displaying, in his most arbitrary formations, erudition, and wit. In the broad comic and burlesque, he is not to be surpassed; and, even in his most satirical-effusions, there is an honesty and good nature always observable. His most celebrated Fiscus is called the ento of the Gargantuan of Rabelais, first printed in 1552; Das gluckhaft Schieff von Zurich (The lucky Ship of Zurich), 1576, 4to, and several others. We also find in Fischart the first attempt at German hexameters, which have been lately brought to perfection by Ang. W. von J. Paul Richter says, he is much superior to Rabelais in regard to language, images and meaning, and is equal to him in erudition, and in an Aristophanic creation of words. He is rather the reviver of Rabelais than his translator.

FI SHI. See Ichtyology.

FISSH, or FISHER, John; bishop of Rochester; a learned Catholic divine in the reign of Henry VIII. He was born in 1459, at Beverley, in Yorkshire, and received his education at Cambridge, where he graduated and obtained a fellowship. In 1493, he was chosen master of Michael-house, and entered into holy orders. Soon after, he was made vice-chancellor. Margaret, countess of Richmond, chose him for her confessor; and, through his influence, determined on the noble academical foundations which have perpetuated her memory. In 1501, he was admitted D. D., and the next year he became the first Margaret professor of divinity at Cambridge. In 1504, he was chosen master of Peterhouse, and subsequently of Rochester, on the recommendation of Fox, bishop of Winchester. He subsequently declined translation to a more valuable bishopric; and he was accustomed to style his church his wife, declaring that he would never exchange her for one that was bishop. The same year in which he was raised to the bench, the office of chancellor of the university of Cambridge was conferred on him. Deeply prepossessed in favour of the ancient faith of the nation, he opposed with zeal and perseverance the principles of Luther and his followers. But the same conscientious motives which impelled Fish to become the champion of Henry VIII., impelled him to oppose the king's measures for procuring a divorce from his wife, and declaring himself head of the church. His imprudence and weakness in listening to the pretended prophecies of Elizabeth Barton, or the maid of Kent, subsequently furnished the court with an opportunity of dispatching him according to the royal designs. In 1534, an act of attainder was passed against Barton and her accomplices, among whom bishop Fisher was included; and, being adjudged guilty of misprision of treason, he was condemned to the forfeiture of his property, and imprisonment during the king's pleasure. It does not, however, appear that this sentence was executed, a fine of £300, it is said, having only been exacted. He was
subsequently sent to the Tower for refusing to submit to the provisions of an act of parliament, which annulled the King's marriage with Catharine of Aragon, and confirmed his subsequent union with Anne Boleyn. He was attainted and deprived in 1534. Pope Paul III., thought proper to reward his zealous adherent by creating him cardinal, but learning that Fisher would not refuse the dignity, exclaimed in a passion, "Yea! is he so lusty? Well, let the pope send him a hat when he will. Mother of God! he shall wear it on his shoulders, for I will leave him never a head to set it on." His destruction was immediately resolved on; and, as no evidence was forthcoming, sufficient to fasten the guilt on his life, Henry employed his infamous solicitor-general, Rich, to entrap Fisher into a positive denial of the king's supremacy. The plot succeeded, and the bishop, being tried before a special commission, was convicted of high treason, on the evidence of Rich, and on the 22d of June, 1536, was beheaded on Tower Hill. Bishop Fisher was a promoter and cultivator of literature, and a patron of learned men. Besides a number of tracts, he was also the author of a commentary on the Seven Penitential Psalms; of Sermons, controversial and devotional treatises, &c.

FISHERIES. The most important objects of the fishery in the White, or cod fishery, (see Cod Fishery) herring, sturgeon, mackerel. These are all described under their respective heads. We shall here only give some account of the manner in which they are taken. There are two favourite places of resort for the cod; one in Europe, off Dogger Bank, Well-Bank, and Grumner; the other, and most extensive and important, on the coast of North America, extending along the coasts of Nova Scotia and Newfoundland, comprising the Grand Bank and Labrador. The number of vessels engaged in this latter fishery, British, American, French, Dutch, and Spanish, is calculated to amount to 6000 or 7000, which take about 40,000,000 fish annually. The vessels which are intended for the Labrador or Coast fishery, are from forty to 120 tons, with about the same proportion of men as the Butkera. They arrive on the ground in June, and select a place for fishing somewhere on the coast of the bay of Chaleur, the gulf of St. Lawrence, straits of Belleisle, or the entrance to Hudson's Bay, (from 45° to 68° N. latitude). Here they spend the summer, as they cure the fish on the coasts, drying them either on the rocks, or on flakes erected for the purpose. On arriving, they anchor, dismantle their vessels, and restore them into their stationary houses. Each vessel is furnished with four or five light boats, carrying two men. As the fish is entirely cured here, they often sail with their cargo, by the last of August, directly to a foreign market. The cod are taken by line, and, as they bite with great voracity, almost any thing serves for bait; they are sometimes taken in nets, sometimes in lines. Anderson says, that the French engaged in the fishery on the Grand Bank as early as 1536.

The sturgeon is valuable for the goodness of its flesh, and for the use derived from some of its parts. It is taken, not only in the ocean, but in the great rivers of northern Asia and Europe. It is sometimes taken in nets, sometimes by the harpoon. The Cossacks repair to the Ural, at fixed seasons, in great numbers. Some thousands appear on the ice in sledges, each provided with a spear, several poles, and other instruments. They arrange themselves in a long line, and, if those in the rear attempt to crowd those before them, their instruments are immediately driven into the ground. As soon as the hatman of the fishers sets forward, they all dash after him in their sledges; the ice is cut, the spears cast; fishmongers, assembled from all parts of the empire, buy the fish, even before they are taken, and the ice is soon covered with sturgeons. The couriers of the great Uralie army (as it is called) travel, at full gallop, from St Petersburg to London, to fetch it all. The value of the fish (including that of the caviar and isinglass) imported into the interior, amounts to 2,000,000 rubles.

Salmon are generally taken in rivers. They are sometimes taken with nets, and sometimes with a kind of locks or weares, made for the purpose, which, in certain situations, is arranged so disposed, in an angle, that, being impelled by force in a direction contrary to the course of the river, they give way and open at the point of contact, and immediately shut again, when the force is removed. On coming up the rivers, the fish enter by these valves, which then close, and prevent their return. They are also taken with weares. They may be taken by means of a light, which attracts them to the surface, when they may be speared or scooped in. See Salmon Fishery.

Mackerel are taken in great quantities in all seas. They move in vast shoals, and are commonly taken in May, June, and July; sometimes in nets, and sometimes by lines. The best manner is in nets, by night, when they are attracted by lights. They are eaten fresh, and are also pickled in salt or in brine. Herrings are remarkable for their immense numbers; they move in shoals, sometimes occupying many miles in extent, and several fathoms in depth. The presence of the herring is easily discovered, by the great flights of birds which accompany them during the day, by the unctionous matter with which the water is covered, and, in the night, by the brilliant phosphoric light which they emit. They are taken generally by night, in nets, which are sometimes of 400, sometimes of 600 fathoms in length, made of silk cord. These nets are dragged by a capstan. Herring are very plentiful about the Orcades in June and July; in the German ocean in September and October; and in the English channel in October, November, and December. See Herrings Fishery. For an account of the anchovy fishery, see Anchovy.

FISHERMAN'S RING (annulus piscatorius). The decrees of the Roman court, as is very well known, are not signed by the pope, but their validity depends upon paper, thread, and the seal. These decrees consist of bulls and briefs. Bulls, issued by the apostolic chancery, and intended for important occasions, are written on black, strong, rough parchment, with Gothic letters; and attached to them is the leaden seal, which has on one side the images of the apostles Peter and Paul, and on the other side the name of the reigning pope. In matrimonial and judicial cases, these bulls are issued in the form digamma, and the bull and annulus have sometimes more acts of grace, it being signed by a red and yellow cord of silk. Briefs are issued on less important occasions, and by the apostolic secretaries. They are written on fine white parchment, with Roman letters, and the seal is the fisherman's ring, impressed upon red wax. This seal is so called because it represents Peter the fisherman. The pope himself, or one of his confessors, keeps this seal; and, after his death it is the
duty of the cardinal chamberlain to break it. The city of Rome gives such a ring to every newly elected pope. The validity of papal documents depends upon the observation of these formalities, and the want of them leads to the conclusion that they are counterfeit.

FITZ (the French word for fils, son); a syllable frequently prefixed to the English surname (Fitz-Herbert, Fitz-Clarence, Fitz-James), which, like the Scottish Mac, the Irish O', and the Hebrew Ben, signifies son, and, in union with the name to which it is prefixed, indicates the ancestor of those who bear it. We must therefore be cautious in the use of the term, for Fitz always denotes illegitimate descent. Thus there are Fitz-Clarences, sons of the late duke of Clarence, row William IV., and the actress, Mrs Jordan. There are many noble families of such an origin, who include their royal progenitors in their genealogical tables.

FIUME (in the Croatian dialect, Reka; in German, St Veit-am-Flam); a seaport at the bottom of the gulf of Guarumo, on the Adriatic, and capital of the Hungarian Litorale, which belongs to the kingdom of Croatia. Fiume contains 743 houses, and 7690 inhabitants. It is the seat of government of the small country, and contains some manufactories, a gymnasium, &c. The manufactures of the city are important; particularly those of rosoglio, tobacco, cloth, sugar, potash, wax, cordage, &c. Its commerce consists of the export of these and other productions, as wine, &c.; and of imports for the inland countries of Austria, as salt, spice, rice, &c. From 1809 to 1813, Fiume was in possession of France, and formed a part of the Illyrian provinces. It is about fifteen leagues from Trieste. In 1772, it was declared a free port. Lat. 45° 19' 39'' N.; lon. 14° 26' 44'' E.

FIXED OILS. There are two species of oil in vegetables, agreeing in the common properties of unctuousness and inflammability, but essentially different in many of their chemical qualities. The one, being capable of being volatilized without decomposition is named volatile oil (q. v.); the other is denominated fixed oil. The latter is generally contained in the seeds, the fruit, the rind, and occasionally in other parts of the plant, in its properties, according to the plants by which it is afforded. The fixed oils are extracted by pressure, and, accordingly, are frequently called expressed oils. When the process is aided by heat, the action of which is to render the oil more fluid, the product is esteemed laudably; but most oils are those expressed from the fruit of the olive, or the seeds of the almond; others, less pure, come from flax-seed and hemp-seed. These oils are usually fluid, but of a somewhat thick consistence, and liable to congeal at very moderate colds; palm oil is even, naturally, concrete. When fluid, they are transparent, of a yellow or yellowish green colour, and capable of being rendered quite transparent by the use of animal charcoal. They are inodorous and insipid, at least if they have been obtained with due care; and free from the mucilaginous and extractive matter of the plants from whence they come; are lighter than water, with which they do not unite, and are very sparingly soluble in alcohol, with the exception of castor-oil. At a temperature below 600° Fahr., they remain unchanged. In the neighbourhood of this temperature, however, they begin to boil, and to disengage an inflammable vapour; but the oil thus distilled is alien to the native vegetable. It loses its characteristic properties, it is no longer fitted for use as an oleo-resin. It is clear, more limpid, and volatile, a portion of carbon being likewise deposited. Transmitted through an ignited tube, fixed oil is converted into carbonic acid and carbureted hydrogen, with a small portion of acid liquor, and a residuum of charcoal. In the open

air, it burns with a clear white light, and formation of water and carbonic acid gas. Accordingly, the fixed oils are capable of being employed for the purposes of artificial illumination, as well in lamps as for the manufacture of gas.

Fixed oils undergo considerable change by exposure to the air. The mucity which then takes place is occasioned by the mucilaginous matters which they contain becoming acid. From the operation of the same cause, they gradually lose their limpidity, and some of them, which are hence called drying oils, become so dry, that they no longer feel the attraction to the lamp, nor give a flame to the wick. This property, for which limed-oil, in a remarkable, may be communicated quickly, by heating the oil in an open vessel. The drying oils are employed for making oil-paper, and, mixed with lamp-black, constitute printers' ink. During the process of drying, oxygen is absorbed in considerable quantity. This absorption of oxygen is, under certain circumstances, so abundant and rapid, and accompanied with such a free disengagement of caloric, that light, porous, combustible materials, such as lamp-black, hemp, or cotton seed may be kindled by it. Many instances of spontaneous combustion have occurred from this cause; and point arrests have been made on the spot, where, at length, a series of experiments was instituted to ascertain the accompanying circumstances.

It appears from these investigations, that if hemp, flax, or linen cloth steeped in linseed oil, lie in a heap, and be somewhat pressed together and confined, its temperature rises, a smoke issues from it, and, at length, sometimes within twenty-four or even twelve hours, it takes fire. The same thing happens with mixtures of oil and fine charcoal, and with lamp-black wrapped up in linen; from whence it is conjectured, that many extensive fires, which have broken out in cotton manufactories, and for which no cause could be assigned, must have arisen from this spontaneous inflammability of oils.

Fixed oils unite with the common metallic oxides. Of these compounds, the most interesting is that with the oxide of lead. When linseed oil is heated with a small quantity of litharge, a liquid results which is powerfully drying and varnishing. Olive-oil, combined with half its weight of litharge, forms the common diachylon plaster. The fixed oils are readily attacked by alkalies. With ammonia, they form a soapy liquid, to which the name of volatile liniment is applied. They are also oxidized by a number of the acids. Sulphuric acid soon renders them black; the oxygen of the acid attracting part of the hydrogen of the oil, and causing the deposition of charcoal; and if heat is applied, a large portion of sulphurous acid is disengaged, and even sulphur is evolved. Nitric acid renders them thick; if heat is applied, the action is more rapid, and a yellow colour is communicated, the oil being rendered concrete. Chlorine thickens oil, and renders it white. When boiled in sulphur, a compound is formed of a brown colour, a very fettish smell, and acrid taste. It likewise, when heated, dissolves phosphorus, forming a liquid which becomes luminous, when exposed to the air. Olive-oil, according to the analysis of Gay-Lussac and Thénard, consists of carbon 77.213, oxygen 9.427, and hydrogen 13.360.

FIXED STARS; those stars which appear to remain always at the same distance from each other, and in the same relative situation. The name comprehends, therefore, all the heavenly bodies, with the exception of the planets, with their moons, and the comets. But besides the apparent motion of the fixed stars, resulting from the diurnal rotation of our earth upon its axis and from the precession of the
Under his direction, the artisan made the quadrants, azimuth-sectors, transit instruments and clocks; and the observatory of Kremnitz became one of the most distinguished in Germany. Its history, by Fixmillner, was published in 1791. Fixmillner also found that Sirius, for example, lies, since the time of Tycho-Brahe, moved about two minutes from its place, &c. But Herschel (On the Proper Motion of the Sun and Solar System, in the Philosophical Transactions, vol. 73) has proved that this apparent change of place is due to the true real motion of our whole solar system in the celestial spaces. Stars have also been seen to appear suddenly in the heavens, and again to disappear. Of others it has been remarked that their size appears alternately to increase and to diminish. Their distance from our earth is, in the most literal sense of the word, immeasurable. The most powerful telescopes cannot give them a sensible diameter.

We can only obtain an idea of their size from the circumstance that, although we approach them by forty millions of miles, (the diameter of the earth's orbit), and recede from them as far, we can find no difference in them. Huygens, by comparing the light of Sirius with that of the sun, tried to determine its distance from the earth, and, upon the supposition that Sirius is of the same size as the sun, made its distance 27,664 times greater. However conjectural such determinations must be, they entirely succeed in proving to us that the celestial spaces have an extent beyond the power of the human mind to conceive. We are in equal uncertainty with regard to the nature and constitution of the fixed stars; but it is in the highest degree probable that they are luminous worlds or suns, around which, as around our sun, planets revolve in determined paths, receiving from them light and heat. The fixed stars are divided according to the differences in their brilliancy, which are very visible to the naked eye, into stars of the first, second, third magnitude, &c. But, besides these stars, which appear in the heaven as distinct bright points of light, the eye, in the clear winter nights, sees here and there little white clouds. These nebulous spots are groups of immemorial stars, which the telescope reveals to us; and the limited power of our instruments alone prevents us from looking forward without end, into the infinite regions of space.

In order to distinguish more easily the fixed stars from each other, names were given to the most remarkable stars in very ancient times, and those names were divided into groups or constellations. (q. v.) Astronomers have given descriptions of all the stars, according to their situations, with their names, magnitude, &c. Cassini, Lalande, Zach, and Piazzi have done so; and great praise is due to J. E. Bode's Uranographia, sive Astrorum Descrip- tio, ex Tabulis aequalibus, ex recensissimis et absum- misitis Astrorum Observationibus (Berlin, 1801). To the text is added, in the German and French languages, a General Account and Description of Stars, with the Right Ascension and Declination of 17,240 Stars; 34 folios.

F. LAMBERT, Cardinal, a Benedictine monk and astronomer in the monastery of Kremnitz, in Upper Austria, was born, May 28, 1721, and died, August 27, 1791. He was forty years professor of the canon law at a school for young noblemen at Kremnitz; but he owes his reputation to his astronomical writings and observations. His uncle, the late Doctor Pantaleon, a notable prelate of the Catholic church, and at a later period, an observatory for the monastery. The works of Lalande, and the assistance of a common carpenter of the village, who did not know how to read or write, were Fixmillner's chief aids in carrying this institution into effect.
mast head, a rear-admiral. The union is the highest admiral's flag. And the flag after the union is white and yellow. The lowest flag, which characterizes an admiral, is blue at the same mast-head. For a vice-admiral, the first flag is red, the second white, and the third blue, at the fore-top-gallant-mast head. The same order is observed with regard to rear-admirals, whose flags are displayed at the mizen-top-gallant-mast, and the lowest, which characterizes a commodore, accordingly, blue at the mizen. All the white flags have a red St George's cross in them, inserted originally to distinguish them from the old French white flag with a white cross. The French national flag, since the late revolution, is the tri-coloured flag, red, white, and blue. When a vessel arrives at sea, if it be on board the admiral, they hang a flag on the main shrouds; if in the vice-admiral, in the fore shrouds; and if in the rear-admiral, in the mizen shrouds. The flags borne on the mizen are particularly called galliants. See plate XXXVII. for representations of various flags belonging to the more important states. They distinguish admirals and emperors in the world. See also the article Standards.

To heave out the flag, is to put out or hang abroad the flag. To hang out the white flag, is to call for quarter; or it shows, when a vessel arrives on a coast, that it has no hostile intention, but comes to trade; or it is the flag hung out by ships to give a signal of defiance and battle. To lower or strike the flag, in an engagement, is a sign of yielding. The way to lead a ship in triumph, is to tie the flags to the shrouds, or the gallery in the hind-part of the ship, and let them hang down towards the water, and tow the vessel by the stern.

FLAG-OFFICER; synonymous to admiral.

FLAG-SHIP; a ship in which an admiral's flag is displayed.

FLAG-STAFF is generally a continuation of the top-gallant-mast above the top-gallant rigging, but is sometimes, especially in guard-ships, a spar, occupying the top of the top-gallant-mast, and is only of use to display the flag or pendant. When it is a continuation of the top-gallant-mast, it is frequently termed the royal mast.

FLAGELLANTS (from the Latin flagellare, to beat); the name of a sect in the thirteenth century, who thought that they could best expiate their sins by the severe discipline of the scourge. Rainer, a hermit of Perugia, is said to have been its founder, in 1260. He soon found followers in nearly all parts of Italy. Old and young, great and small, ran through the cities, scourging themselves, and exhorting to repentance. Their number soon amounted to 10,000, who went about, led by priests bearing banners and crosses. They went in thousands from country to country, in regular bands. In 1261, they broke over the Alps in crowds, and entered into Germany. When a council of war is held at sea, if it be on board the admiral, they hang a flag on the main shrouds; if in the vice-admiral, in the fore shrouds; and if in the rear-admiral, in the mizen shrouds. The flags borne on the mizen are particularly called galliants. See plate XXXVII. for representations of various flags belonging to the more important states. They distinguish admirals and emperors in the world. See also the article Standards.

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degrees became disgusted with flagellation. The Franciscan monks in France (Cordeliers) observed the practice longest.

It is not to be wondered at, that a custom so absurd was so long maintained, when we remember the great advantages which the sufferers promised themselves. In the opinion of men in the middle ages, flagellation was equivalent to every sort of expiation for past sins, imposed by the father confessors. 30,000 strokes, and the chanting of thirty penitential psalms, were sufficient to cancel the sins of a year; 30,000 strokes, the sins of ten years, &c.

An Italian widow, in the eleventh century, boasted that she had made expiation by voluntary scourging for 100 years, for which no less than 300,000 stripes were requisite. The opinion was prevalent, likewise, that, however great the guilt, by self-inflicted pain, hell might be escaped, and the honour of peculiar holiness acquired. By this means, flagellation gained a charm in the sight of the guilty and ambitious, which raised them above the dread of corporeal suffering, till the conceits of hypocrisy vanished before the clearer light of civilization and knowledge.

**Flagoelet**; a small pipe or flute, the notes of which are exceedingly clear and shrill. It is generally made of box or other hard wood, though sometimes of ivory, and has six holes for the regulation of its pitch. Its mouthpiece is placed at the bottom and mouthpiece and that behind the neck.

**Flail**; an instrument for thrashing corn, that consists of—1. the hand-staff, which the labourer holds in his hand; 2. the swirle or that part which strikes the corn; 3. the caplins, or leathern thongs that bind the hand-staff and swirle; 4. the middle band, being the leathern thong, or fish-skin, that ties the caplins together.

**Flakes**; a sort of platform made of hurdles, used for drying coals. They are usually placed near the shores of fishing-harbours.—*Flake* signifies also a small stage hung over a ship's side to call or repair any breach.—We speak also of a *flake of snow*.

**Flagbeau**; a kind of large taper, made of hemen wicks, by pouring melted wax on their top, and letting it run down to the bottom. This done, lay them to dry, after which roll them on a table, and join four of them together by means of a red-hot iron. The number of which the lamp has to be made is brought to the size required. Flagbeaus are of different lengths, and made either of white or yellow wax. They serve to give light in the streets at night, or on occasion of illuminations.

**Flame.** Newton and others have considered flame as an ignited vapour, or red-hot smoke. This, in a certain sense, may be true; but, no doubt, it contains an inaccurate comparison. It appears to be well ascertained, that flame always consists of volatile inflammable matter, in the act of combustion, or combination with the oxygen of the atmosphere. Many metallic substances are volatilized by heat, and burn with a flame, by the contact of the air in this rare state. Sulphur, phosphorus, and some other bases of acids, exhibit the same phenomenon. But the flames of organized substances are in general produced by the extrication and ascension of by hydrogen gas, with more or less of charcoal. When the circumstances are not favourable to the perfect combination, this produces a portion of the combustible matter, which passes through the luminous current unburned, and forms smoke. Soot is the condensed matter of smoke. As the artificial light of lamps and candles is afforded by the flame they exhibit, it seems a matter of considerable importance to society, to ascertain how the most luminous flame may be produced with the least consumption of combustible matter. There does not appear to be any danger of error in concluding, that the light emitted will be greatest when the combustion is completed in the shortest time. It is therefore necessary, that a stream of volatilized combustible matter, of a proper figure, at a very elevated temperature, should pass into the atmosphere with a certain determinate velocity. If the figure of this stream should not be duly proportioned, that portion of its internal parts will not be completely burned, for want of contact with the air. If its temperature be below that of ignition, it will not burn when it comes into the open air. And there is a certain velocity, at which the quantity of atmospheric air which comes in contact with the vapour will be neither too great nor too small; for too much air will diminish the temperature of the stream of combustible matter so much as very considerably to impede the desired effect; and too little will render the combustion languid. We have an example of a flame too large, in the mouths of the chimneys of fornsaces, where the combustible part is prevented from burning, by the thickness of about an inch or two, according to circumstances, and the internal part, though hot, will not set fire to paper passed into it through an iron tube; the same defect of air preventing the combustion of the paper as prevented the interior of the vessel from burning. By an application of Aragon, we see the advantage of an internal current of air, which renders the combustion perfect by the application of air on both sides of a thin flame. So likewise a small flame is whiter and more luminous than a larger; and a short snuff of a candle, giving out less combustible matter in proportion to the circumference of flame, the quantity of light because increased to eight or ten times what a long snuff would have afforded. See Caloric, Combustion, Fire, and Damps.

**Flag mel, Nicholas**; an adept of the fourteenth century, who acquired property to an enormous extent. He was born of poor parents, at Pontoise, whence he removed to Paris, and there practised in the double capacity of a scrivener or notary, and a miniature painter. Here he was reported to have amassed a fortune of 1,500,000 crowns—an immense sum in those days. His great wealth attracted the notice of Charles VI., who commissioned his master of requests, to make him a present of the city of Paris. By which he had become so opulent. Flagmel's account was, that having purchased "an old, thick book, gilt on the edges, and written on tree-bark, in fair Latin characters, with a cover of thin copper, on which were sculptured many unknown and singular devices," he studied it for twenty-one years, without being able to discover more than that it was a treatise on the philosopher's stone. In the course of a pilgrimage, however, to the shrine of St James of Compostella, he met a converted Jew, named Sanchez, who taught him to decipher the paintings, and accompanied him back to France, with a view of translating the whole work. Sanchez resided at Orleans; but not before his pupil had so well profited by his instructions as to be able to decipher the whole contents of the volume; on which he immediately went to work, and, as he declares, "On Monday, the 17th of January, 1382, about noon, turned half a pound of quicksilver into pure silver; and on the 26th of the same year, in the 8th month, at the house of the wife, at about five o'clock in the afternoon, converted the same quantity of quicksilver into pure gold." Flagmel hereupon founded fourteen hospitals (that of the Quinze-Vingts among others), built at his own expense three new churches (including that of St Jacques de la Boucherie, and that of the Innocents; in the former of which he and
his wife, Peronelle, were buried), and endowed with considerable revenues seven old ones at Paris. This narrative, together with a copy of the book, was returned to the king, and the volume deposited in the royal library, where, says our authority, it is still preserved. In 1413, Flamé, although the art of prolonging life to a period of a thousand years was one of the secrets of his treatise, died, having nearly attained the age of one hundred. Paul Lucas tells us, in his account of his second voyage, that, on the 9th of July, 1705, at Burnus Baschi, near Brussa, in Natolia, he fell in with an Usbec dervise, who was not only perfectly well acquainted with the story of Flamé, but who, it is added, had seen the birds when they were about four hundred years old, and belonged to a society of seven adepts, who travelled about the world, meeting at some appointed spot every twenty years, and that Brussa was their next rendezvous. Some have asserted that Flamé grew rich by pillaging the Jews during the persecutions directed against them in France. Others have accounted for his riches by attributing them to his success in commercial speculations, at that period comparatively but little understood. Several treatises on alchemy have been ascribed to him. They are, however, generally considered forgeries. His men's Oeuvres, Philosophique, a treatise on the transmutation of metals, printed in 1561, and Le Désir désiré.

FLAMEN; in Roman antiquities, a priest who was consecrated to one particular divinity; as flamens Diviti, the priest of Jupiter (from flamens Diviti, Jovis), who was the highest of all the flamens; and flamens Martialis, a priest of Mars, &c. The name is derived from the cap or fillet which they wore on the head. The flamens of Jupiter, Mars, and Quirinus were the flamines majores, and were taken from the patricians only; the others (according to Festus, twelve in number) were called minores. When the emperors were deified, they, also, had flamens, as the flamens Augusti.

FLAMINGO (Phoenicopterus, L.). The flamingo, although one of the most remarkable of all the aquatic tribes for its size, beauty, and the peculiar delicacy of its flesh, is by no means well known as regards its habits and manners. The body of the flamingo is smaller than that of the stork; but, owing to the great length of the neck and legs, it stands nearly five feet high. The head is small and round, and furnished with a bill nearly seven inches long, which is covered with flesh, having a membrane at the base, and suddenly curved downwards from the middle. The long legs and thighs of this bird are extremely slender and delicate, as is also the neck. The plumage is not less remarkable than its figure, being of a bright flame-coloured red in the perfect bird. The young differ greatly from the adult, changing their plumage repeatedly. The flamingoes live and migrate in large flocks, frequenting desert sea-coasts and salt-marshes. They are extremely shy and watchful. While feeding, they keep together, drawn up artificially in lines, which, at a distance, resemble those of an army; and, like many other gregarious birds, they employ some to act as sentinels, for the security of the rest. On the approach of danger, these give warning by a loud sound, like that of a trumpet, which may be heard to a great distance, and is the signal for the flock to take wing. When flushed, they fly with a whirring sound, the male, being molluscous, spawn, and insects, which they fish up by means of their long neck, turning their head in such a manner as to take advantage of the crook in their back. They breed in companies, in inundated marshes, raising the nest to the height of their bodies, but far enough down the hollow in the centre of which is concave at the top. On the top of this pyramidal flower lays her eggs, and hatches them by sitting on them, with her legs hanging down, like those of a man on horseback. Dampier, who describes the ridiculous posture of these birds, while fulfilling this office, justly supposes it must arise from the great length of their limbs, which renders it impossible to fold them under their bodies, as in other birds. The young, which never exceed three in number, do not fly until they have nearly attained their full growth, though they can run very swiftly a few days after their exclusion from the shell. They occur in all the warm countries of the globe, sometimes visiting the temperate shores. This bird was held in high estimation by the ancient philosophers, and Apicius, so famous in the annals of gastronomy, is recorded by Pliny to have discovered the exquisite relish of the flamingo's tongue, and a superior mode of dressing it. Dampier, and other travellers, speak variously respecting the flesh of this bird. Although some esteem the flesh very highly, and consider that of the young equal to the flesh of the partridge, others say that it is very indifferent. In some parts these birds are tamed, principally for the sake of their skins, which are covered with a very fine down, and applicable to all purposes for which those of the swan are employed. When taken young, they very soon grow familiar, but they are not found to thrive in the domesticated state, as they are extremely impatient of cold. They are caught by snare, or by making use of tame ones. The method is, to drive the latter into places frequented by the wild birds, and to lay meat for them there. No sooner do the wild flamingoes see the others devouring this food, than they flock around to obtain a share. A battle ensues between the parties, when the bird-catchers, who are concealed close by, spring up and take them. There are two species, one of which visits Europe, and the other North America. The species are, P. antiquorum (Temino), of a rose colour, with red wings, having the quills black. It inhabits the warm regions of the old continent, migrating in summer to southern, and sometimes to central Europe. P. ruber; deep red, with black quills. This species is peculiar to tropical America, migrating in the summer to the southern, and rarely to the middle States.

FLAMSTEED, John, an eminent English astronomer, was born at Derby, in Derbyshire, in 1646. He was educated at the free school of Derby, but, owing to his precocious state of health, he was not sent to the university. He made astronomical studies by a perusal of Sacrobosco's book De Sphaera, and prosecuted them with so much ardour and success, that, in 1669, he calculated an eclipse of the sun, that was omitted in the Ephemerides, for the following year, and sent the result, with other calculations, to the royal society. In 1671, he visited London, where he was introduced to some of the most eminent mathematicians of the age, and, on his journey homewards, passed through Cambridge, where he visited doctor Barrow and Sir Isaac Newton, and entered himself of Jesus college. In 1673, he wrote a treatise on the True and Apparent Diameters of all the Planets of which Sir Isaac Newton made some use in his Principia. In 1674, he composed his Ephemerides, to show the futility of astrology. He also made two barometers, which Sir Jonas Moore presented to the king, who appointed him to the new office of astronomer royal. He made a perpetual calendar, the first in the world, which he published in 1719, by which he had printed a great part, and, with a slight excep-
tion, prepared for the press, the whole of his great work, *Historia Caestae Britannica*, 3 vols. folio, which was published in 1725.

FLANDERS is an ancient and rich part of the Netherlands. Charles the Bald established the county of Flanders in 863, which fell, at different times, under the government of Burgundy, Spain, &c. Towards the beginning of the eighteenth century, it was divided into French, Austrian, and Dutch Flanders. French Flanders now forms the French department of the North. The other two parts now belong to Belgium, and are called East and West Flanders. Dutch Flanders was a small territory, now forming a part of the province of East Flanders.

*East Flanders* is bounded north by Zealand, east by Antwerp and South Brabant, south by Hainault, and west by West Flanders; population, in 1824, 681,489; square miles, 1260. Ghent is the capital. The surface, in the north, is level; in the south, undulating; the soil, a heavy loam, very fertile; the climate moist, but not unhealthy; the productions, corn, pulse, flax, madder, tobacco, with excellent pastures.

*West Flanders* is bounded north and north-west by the German ocean, east by Zealand and East Flanders, south-east by Hainault, and south and south-west by France; population, 557,871; square miles, 1540. Bruges is the capital; Ostend the principal harbour. The surface is level; the soil fertile; the agriculture in an improved state; the climate humid; the manufactures extensive in linen and fine lace; also cotton and leather, with extensive distilleries and breweries.

**FLANK** (from the French), in fortification; that part of a work which affords a lateral defence to another. In a bastion, the flanks are those lines which form the central part of the bastions. Flanck signifies the outer extremity of the wing of an army; and it is one of the most common manoeuvres to surround this most vulnerable point. The enemy, if proper precautions have not been taken, is then obliged to withdraw his flank; therefore to change his front, and is thus exposed to a defeat. This manoeuvre is called outflanking. A bold, but not always practicable manoeuvre, to prevent the consequences of this attempt, is that of outflanking the enemy who makes it.

**FLANNEL**; a woollen stuff, composed of a woof and warp, and woven after the manner of baize. 

**FLAT**; a level ground lying at a small depth under the surface of the sea; otherwise called a shoal or shallow.

**FLAT HEADS.** See Chochavos.

**FLAX (Linum usitatissimum)** has been cultivated from remote antiquity, throughout a great part of Europe, Asia, and the north of Africa, for various purposes. Its native country is not known with certainty, though, according to Olivier, it is found wild in Persia. The root is annual; the stem, slender and frequently simple, from eighteen inches to two feet high; the leaves, alternate, entire, and lanceolate or linear; the flowers, blue and pedunculate, in racemes, single or doubled, in ten to one hundred cells, each cell containing one seed. This plant is cultivated principally for the fibres yielded by the bark, of which linen cloth is made. The use of this article is so ancient, that no tradition remains of its introduction. The ancient Scandinavians and other barbarous nations were clothed with linen. The mummies of Egypt are enveloped with it, and immense quantities are still made in that country, especially along the Nile; and it is worn almost exclusively by the inhabitants of Syria, Arabia, Abyssinia, and other places, are supplied from Egypt. Italy also receives vast quantities from the same country, through the merchants of Constantinople. The use of linen passed from Egypt into Greece, and afterwards into Italy. Besides forming agreeable and beautiful apparel, the hair being converted into paste, are made into paper.

The seeds of the flax are mucilaginous and emollient, and an infusion of them is often used as a drink in various inflammatory disorders; they also yield an oil, well known in commerce under the name of *linseed oil*, which differs, in some respects, from most expressed oils, as in congealing in water, and not forming a solid soap with fixed alkaline salts. This oil has no remarkable taste, is used for lamps, sometimes in cookery, and also forms the base of all the oily varnish made in imitation of China varnish. It is much employed in the coarser kinds of painting, especially by the restorations not made in the open air or in winter weather. Equal parts of lime-water and linseed oil form one of the best applications for burns. The cakes remaining after the oil is expressed, are used for fattening cattle and sheep. Flaxseed has been substituted for grain in times of scarcity, but it is heavy and unwholesome.

In Egypt, flax is sown about the middle of December, and is ripe in March. In Europe, and in America, it is generally sown in the spring, from March to May; sometimes, however, in September and October. In a dry and warm country, it is better to sow in autumn, as autumn and winter favour its growth, and it acquires strength enough to resist the drought, should there happen to be any in the spring. On the other hand, in cold and moist countries, sowing should be deferred till late in the spring, as too much moisture is hurtful. A light soil is the most suitable, though good crops are obtained from strong and clayey grounds. As it appears to degenerate when repeatedly sown without changing the seed, it is usual, in some countries, to import the seed from the north of Europe, particularly from Riga, which affords the best. The American seed, also, bears a high reputation, and, in Ireland, is preferred for the lighter soils, and the Baltic for the more clayey. In Georgia, the first varieties planted by the Russians, it is sufficient to change the seed frequently, by sowing in the heavier lands the seeds ripened in the lighter, and the reverse.

There are three varieties of flax: the first produces a tall and slender stem, with very few flowers, ripeus late, and affords the longest and finest fibres; the second produces numerous flowers, and is the most proper for cultivation, where the seed is the object; but its fibres are short and coarse; the third is the most common, and is intermediate between the other two. It is important not to mix the seeds of these three varieties, as they ripen at different periods, and, besides, the first should be sown more closely, and the second at greater intervals than the third. When it is a few inches high, it should be freed from weeds, particularly from the cuscusa, a parasitical plant, consisting of yellowish or reddish filaments, and small white flowers; all these forms which have to them should be pulled up and burnt. To prevent its lying on the ground, it is usual, with some, to stretch lines across the field, intersecting each other, and Fastened at the intersections. As soon as it begins to turn yellow, and the leaves are falling, it is pulled, tied together in little bundles, and usually left upright on the field till it
becomes dry, when the seeds are separated, either by beating on a cloth, or by passing the stems through an iron comb. The stems, after being passed, are placed in a pasture, and the leaves are separated from the bundle by roting—a process which is necessary to facilitate the separation of the fibres, and which is accomplished in three different manners: 1st, on the earth, which requires a month or six weeks; 2d, in stagnant water, which is the most expeditious manner; 3d, in running water, for which about a month is necessary. The finest fibres are produced by this latter mode, and certain rivers are considered as possessing advantages over others. Whatever method be made use of, it is necessary to turn it every three or four days. After this process, it is taken out, dried, and is ready for obtaining the fibres. For this purpose, a handful is taken in one hand, laid upon a table, and beaten with a wooden instrument, afterwards drawn forcibly over the angle of the table with both hands, in order to free it from fragments of the stem. Another method is by means of a comb or a broken comb. The latter is a sort of iron comb, beginning with the coarsest and ending with the finer, and is now ready for spinning.

Flax, New Zealand (formicin tenox). The fibres of this plant are used, by the inhabitants of New Zealand, as a rope, matting, and flax, to which they are much superior. They are, in fact, stronger than any other known vegetable fibres, hardly yielding, in this respect, to silk. The stem of this plant grows six feet high and upwards, is straight, very firm, and is branched or pinnate above, and sheathed at base by the leaves; the leaves are five or six feet long, ensiform, very much compressed at base, where they are disposed on two opposite sides of the stem, and somewhat resemble those of the common cat-tail; the flowers have six petals, six stamens, and one style. In its native country, it grows on both wet and dry places, and is apparently adapted to every kind of soil, but seems to prefer marshy places. The fibres are very long, of a snowy whiteness, and possess the lustre of silk. French enterprise has been awakened to the importance of introducing the culture of this plant. It bears the climate of the south of France, and has succeeded in the open air throughout the year. It has succeeded perfectly in Normandy, producing seeds which have been sown, and proved fertile. Every year, as the inner leaves shoot upward, it loses the outer; and, consequently, the outer leaves should be pulled off when they have acquired their full growth, while the stock may remain in the ground for years. It may be multiplied by off-shoots which are separated in the spring. The method by which the New Zealanders obtain the fibres is very tedious; accordingly, the French schemists have devised other modes, which promise success.

FLAXMAN, John, eminent English sculptor, was born at York, in 1755. His earliest notions of art were derived from casts, in the shop of his father, who sold plaster figures, from many of which he made models in clay. In 1770, he was admitted a student of the royal academy, where he prosecuted his studies with great diligence. In 1787, he went to Italy, where he remained seven years, and left many memorials of his genius, which have been much admired. While in Rome, he executed those fine illustrations of Homer, Dante, and Eschylus, which at once made him known in Europe. The illustrations of Homer and Eschylus were published at Rome in 1793; and the former were republished, with additions, in London, 1805. Those of Dante were also published in London in 1806. When he commenced his designs from the Greek poets, he confined himself almost entirely to copies of subjects on the Greek vases. In 1794, he returned to England, where lie lived the remainder of his life, engaged in professional pursuits, until his death, in 1826. He had been elected an associate of the royal academy, in 1797, royal academian, 1809, and, in 1810, was appointed professor of sculpture to that institution. His lectures have been published since his death (50 plates). He was a member of the learned company of lord Mansfield, in Westminster abbey, is considered the finest public monument in England. His monument is Collins, at Chichester, to earl Howe, in St Paul's, and to sir Joshua Reynolds, are among his best works in sculpture, which are, however, accused of being somewhat deficient in softness, finish, and grace. He also executed statues of Washington, sir W. Jones, Mr Pitt, lord Nelson, &c., and some colossal groups. The baso-relieves in front of Covent Garden theatre, and the exterior ornaments of the new palace, were designed by him. His illustrations of Homer, Eschylus, and Dante, have been republished in Germany, and in Paris by Niot Du fresne, year XI.

FLECHIER, esprit; a French divine of the Catholic church, highly celebrated as a pulpit orator; born of obscure parents, in the county of Avignon, in 1632. The care of his education was undertaken by his uncle, the rector of Avignon, and he afterwards began to preach. A congregation of the Christian doctrine, of which young Flechier became a member. He made great proficiency in literature, and was appointed professor of rhetoric in the college of his order at Narbonne. While in this situation, he delivered a funeral oration for the archbishop of Narbonne, which was greatly admired. On the death of his uncle, he quitted the congregation, owing to a difference with the new superior, and went to Paris. He devoted his talents to the study of eloquence, in which he became so eminent as to be reckoned the rival of the celebrated Bossuet. In 1673, Flechier was elected a member of the French academy. In 1679, he published his History of the Emperor Theodosius the Great, which was followed by his Life of Cardinal Ximenes. Louis XIV., in 1685, raised him to the bishopric of La- vau, on which occasion that prince said to him — "I have made you wait some time for a place which you have long desired, but I wish now to deprive myself of the pleasure of hearing you preach." He was translated from the diocese of Lavau to that of Nismes in 1687. The latter bishopric abounded in Protestants, and, the edict of Nantes having just been revoked, the talents of Flechier were successfully employed in converting them to the established faith. It is to his credit that he acted with great moderation in the discharge of his pastoral duty, endeavouring to recall the people from what he conceived to be the path of error, by reasoning and eloquence, rather than by force and terror. He died in February, 1710. Of his funeral orations, the finest was that which he delivered on the death of marshal Turenne.

FLECKNOE, richard; an English poet and dramatic writer, contemporary with Dryden, and chiefly memorable for having had his name gibbeted by that satirist, in the title of his invective against Shadwell. His works are far from being contemptible.

FLEECE, golden. See Argonauts, and Jason.

FLEECE, order of the golden, one of the oldest and most honourable orders in Europe, was established by Philip III. of Burgundy, in 1271. The Good, January 10, 1430, at Bruges, on the occasion of his marriage with his third wife, Isabella, daughter of King John I. of Portugal. In the begin-
FLEECES—FLETCHER.

uring of the statutes of the order (1431), Philip says, he took the name from the golden fleece of the Argonaut Jason, and that the protection of the church was the object of the order. Philip ordered that this dignity should be hereditary in his successors in the government. The decoration of the order is a chain, composed of flints and steel, alternately; in the middle of which the golden fleece is fastened. Annual chapters were to be held, when the majority was to decide on the admission of new members. But several of the first statutes were changed. Philip himself increased the number of knights from twenty-four to thirty-one; Charles V., his grandson, to fifty-one. The last chapter was held in 1568, at Ghent. Since that time, the monarch has made knights of the golden fleece according to his pleasure. When, after the death of Charles V., the Burgundian possessions and the Netherlands fell to the Burgundian-Spanish line of the house of Austria, the kings of Spain exercised the office of grand-master of the order; but when Charles III. (Charles VI. in the line of German emperors) received the crown of the Spanish Netherlands, he was afterwards the Austrian, Netherlands, he insisted upon being the grand-master of the order. The dispute was not settled, and the order, at present, is conferred both at Vienna and Madrid. The chain is now only the decoration of the grand-master; the other knights wear a golden fleece on a red ribbon. The Spanish golden fleece differs from the Austrian by the inscription Prevent laborum, non vita, upon the steel. At both courts, the order of the golden fleece is the highest; and, as its nominal object is the protection of religion, it is conferred only on Catholics, Protestant sovereigns only making an exception.

FLEECES, THE WREATH OF THE THREE GOLDEN. August 15, 1809, in the camp at Schonbrunn, Napoleon added a third order to those of the legion of honour and of the iron crown. It was intended to consist of 100 grand officers, 400 commanders, and 1000 other members, chiefly military men. No civilians, except the grand dignitaries of the empire, ministers who had field their offices ten years, ministers of state after twenty years' service, and presidents of state after three years' service, were to be admitted. Of the military, only those who had received three wounds, in three different battles, were to be admitted. Those regular officers who had been present in the grand army, were to receive this order, instead of their eagles; their most meritorious subaltern officers were named commanders; and, the most meritorious non-commissioned officer or private, of each battalion, was to be made a member; the former with an income of 4000 francs, the latter with one of 1000, from the funds of the order. To become a grand officer, it was necessary to have commanded a division of the grand army, in the field or at a siege. The emperor was to be grand-master; the king of Rome was the only hereditary member; the princes of the blood could not be admitted, unless they had served in one campaign, or been, at least, two years in the army. It is not known what induced the emperor to drop this scheme. The only appointments that were made were those of count Andress, chancellor of the order, and count Schimmelpenninck, inspector.

FLEETWOOD, CHARLES, a parliamentary general in the civil wars, was the son of Sir William Fleetwood. He early entered the army, and, on the breaking out of the civil wars, declared against the king, commanded a regiment of cavalry in 1644, and afterwards held Bristol for the parliament. At the battle of Newbury, he commanded the left wing, and, becoming allied to the family of the protector, by marrying his daughter, after the decease of his first husband, Ireton, was sent as lord deputy to Ireland. On the death of Cromwell, he joined in inducing his son Richard to abdicate. His death took place shortly after, and Sir Newington, his son, a colonel in the army, was the next. FLEMMING, or FLEMING, PAUL, one of the best German poets of the seventeenth century, was born, October 17, 1609, at Hartenstein, in the county of Schonburg. After a good foundation for his education had been laid, by private instruction at home, he went to the royal school at Meissen, and thence to Leipsic, where he studied medicine. The confusions of the thirty years' war obliged him, in 1638, to go to Holstein, where the duke Frederic was on the point of sending an embassy to his brother-in-law, the czar Michael Fedorowitsch. Flemming, full of ardour and enthusiasm, sought a place in the ambassador's suite, obtained it, performed the journey with him, and, in 1634, returned safe to Holstein. Immediately after, the duke resolved to send a still more splendid embassy to Persia, to obtain for his states some commercial privileges. Flemming resolved to underwrite the expedition, and this, as he had so large a stock of information. The embassy set out October 27, 1635, and entered Isphahan, August 3, 1637, remained there more than three months, and, returning by another route, reached Moscow in January, 1639, which it left again in March. (See Olearius). In Revel, Flemming fell in love with the daughter of a respectable merchant, and, on his return to his previous intention, after returning to his country, to settle as a practising physician in Hamburg, he went, in 1640, to Leyden, where he took his degree. He had but just returned to Hamburg, when he was snatched away by death, April 2, 1640, in the flower of life. In his songs and sonnets, sacred and other poems (Jena, 1642 & seq.), an amiable enthusiasm is joined to deep and warm sensibility. His longer poems describe the adventures of his journey with great spirit and power, and other accidental events with originality and liveliness, and all his works bear the impress of genius. A selection from his poems is contained in the Library of German Poets of the seventeenth century, by W. Muller, 3 vols. (Leipsc, 1829). An earlier and more extensive selection was made by Gustavus Schwab (Stuttgart, 1820).

FLESH; the muscle of animals. These consist chiefly of albumen, gelatin, extractive, phosphates of soda, phosphate of ammonia, phosphates and carbonates of lime, and sulphate of potash.

FLETCHER, ANDREW, a Scottish political writer and patriot, was the son of Sir Robert Fletcher, of Sultoun. He was born in 1653, spent some years in foreign travel, and first appeared as a public character in the Scottish parliament, as commissioner for East Lothian, where, having distinguished himself in opposition to the court, he deemed it prudent to retire to Holland, and, on his non-appearance to a summons from the lords in council, he was outlawed. In 1660, he came not back into the army until 1665, with the bands of liberty against the designs of James II.; and, in 1665, he joined the enterprise of the duke of Monmouth. While on this expedition, having killed in a quarrel another partisan in the same cause, who had insulted him, he ducked the man. He then repaired to Spain, and afterwards to Holland. He distinguished himself in a war against the Turks. He subsequently joined the Scottish refugees in Holland, and, when the revolution took place, resumed possession of his estate, and became a member of the convention for settling the new government in Scotland. In 1686, he printed A Discourse on Government, in which he attacked the Ministry; and also, Two Discourses concerning the Affairs of
Scotland. In 1703, he opposed a vote of supply, until "the house should consider what was necessary to secure the religion and liberties of the nation on the death of the queen" (Anno), and carried various limitations of the prerogative, forming part of the act of security, rendered nugatory by the Scottish union, which he vehemently opposed. He died in London, in 1716. His tracts, and some of his speeches, are published in one volume, octavo, entitled The Political Works of Andrew Fletcher, Esq.

**FLETCHER, John, son to the bishop of London,** an eminent dramatic writer, is said to have been born in 1576, in Northamptonshire, where his father was dean of Peterborough; although others suppose that he was a native of London. He received his education at Cambridge, but it is not known that he ever looked forward to any profession, except that of a poet, in which capacity he was the inseparable partner of Francis Beaumont. (q. v.) After the death of Beaumont, he is said to have consulted Shirley in the formation of his dramas. He survived his coadjutor some years, but died of the plague in 1625, and was interred in the church of St Mary Overwyk, Southwark. The plays of Beaumont and Fletcher consist of comedies, tragedies, and mixed pieces, besides some military tracts, and some striking incidents and characters. It is a tradition that Beaumont excelled in the judgment requisite to plot and construction, and Fletcher in fancy and poetical feeling. The Faithful Shepherdess, a dramatic pastoral, the sole composition of the latter, which evidently suggested the Comus of Milton, wants the judgment given by Beaumont in respect to plot, and as obviously displays the fancy and feeling of Fletcher. Their plays, according to Dryden, were, in his early days, acted two for one with those of Jonson and Shakspere; but the license assumed in the latter part of those dramas has done much to aid in their exclusion of late years, during which only one or two of them occasionally appear.

**FLETCHER, Phineas;** author of the Purple Island, and Fiscatory Eclogues. The former is an allegorical description of Spain, founded upon an allegory in the ninth canto of the second book of the Faery Queen. It is composed in the Spenserian manner, and is not without passages of strong fancy and beauty of description, clothed in smooth and elegant verse. In the first five cantos, however, the reader will be charmed and instructed, but little adapted to the handling of poetry. When, however, he steps from the physical to the intellectual man, he not only attracts, but secures attention, by a profusion of images, many of which are distinguished by much boldness of conception and brilliancy of colouring. His Fiscatory Eclogues have considerable sweetness of versification, and much descriptive elegance. Fletcher entered king's college, Cambridge, in 1600, and, in 1621, obtained the living of Helgøy, in Norfolk. His two works above mentioned were printed together in 1630.

**FLEURY, Charles-Pierre-Claret, Count of,** member of the French institute, minister of the marine, &c., one of the most learned hydrographers of modern times, was born at Lyons, in 1738. He entered the navy at the age of thirteen, and distinguished himself by his skill in navigation and exemplary conduct. After the termination of the seven years' war, in which he served, he again turned his attention to nautical studies; and the chronometer, invented by him and the watchmaker Ferdinand Berthoud (the first which was made in France), was tried by him, in 1768 and 1769, in the frigate Isis, which he commanded. The results sur-

passed all expectation. Fleury then published his excellent work, *Voyage fait par Ordre du Roi en 1768 et 1769, pour éprouver les Héroses Marines* (Paris, 1773, 4to, 1781, 8vo). He received the important post of director of the harbours and arsenals. In this station, he drew up almost all the plans for the naval operations of the war of 1778, and the instructions for the voyages of discovery of La Peyrouse and Etrecasteaux, of which, however, Louis XVI., had, as a skilful geo-graphe, furnished the general plan. In 1790, Fleury was made minister of the marine, and, some time after, the direction of the education of the dauphin was given him. The storm of the revolution obliged him to discontinue his public occupations. He now devoted himself entirely to science. When the times became more tranquil, he became a member of the council of the ancients, in 1797, afterwards of the council of state, and, finally, under the imperial government, a senator. He died, August 18, 1810. We have, by him, the *Découvertes des Français dans le Sud-Est de la nouvelle Guinée.* He also published Stephen Marchand's Voyage round the world, between 1790 and 1792. The excellent introduction to the work is by Fleuriel. Other geographical and hydrographical works, as his *Atlas de la Batique et du Catlogue, avec les stations, altitudes, et temps marins;* the publication of which he commenced, were left unfinished by him. He had also undertaken to write a Universal History of Voyages, which, if finished, would have been more complete than any work of the kind which we possess.

**FLEURUS, or FLEURY;** a town of Belgium in the province of Hainault, on the river Sambre, six miles N. E. of Charleroy. The population is 2,400. It is remarkable for having been the seat of four battles fought near it—in 1632, 1630, 1794, and 1815; the first on the 30th of August, 1632, between the troops of Spain and some German states. The second battle was fought in 1690, between the allies, under the command of the prince of Waldeck, and the French under the duke of Luxemburg, in which the former were defeated, with the loss of 5,000 killed and 4,000 prisoners, forty-nine pieces of cannon, eight pair of kettle-drums, and ninety-two standards and colours. A third battle was fought here in June, 1794, between the Austrians and the French, in which the former were defeated with great loss. The fourth battle near this place was the bloody engagement, on June 16, 1815, between the Prussians and the French, called the battle of Ligny, (q. v.). Population about 2,500.

**FLEURY, Andre Hercule de,** cardinal and prime minister of Louis XV., was born at Lodève, in Languedoc, in 1653, and pursued his studies, at first, in the college of the Jesuits, at Clermont, whence he was removed to the college d'Harcourt, at Paris, in order to study philosophy. He was then made canon of Montpelier and doctor of the Sorbonne. At court, he won general favour, by his pleasing person and fine understanding; became almoner of the queen, and afterwards of the king. In 1693, Louis XIV., gave him the bishopric of Frejus, and, shortly before his death, appointed him instructor to Louis XV. In the troubled times of the regency, he knew how to retain the favour of the duke of Orleans, by asking for no favours, and keeping clear of office. The king, when he appointed the friendship of the young king for his teacher, offered him the archbishopric of Rheims, one of the highest ecclesiastical dignities in France; but Fleury refused to become the first duke and peer of France, and thereby be separated from his pupil. In 1766, he was made cardinal, and, on the next year, the young king, Louis XV., placed him at the head of the...
FLIBUSTIER. — See Buccaneer.

FLINT, a mineral which occurs of all colours, but generally yellowish and dark gray, commonly in a compact amorphous body, rarely crystallized. It is widely spread throughout the earth, in primitive, secondary, and alluvial formations, but especially in limestone. This mineral consists of 98 silica, 0.50 lime, 0.25 alumina, 0.26 oxide of iron, and 1.0 loss. Its principal use is for gun-flints, and it is also reduced to a powder, and used in the manufacture of porcelain and glass. The manufacture of gun-flints is exceedingly simple, and a good workman will make 1000 flints a day. The whole art consists in striking the stone repeatedly with a kind of mallet, and bending each stroke, so that the splinters are afterwards shaped at pleasure, by laying the line in which they are to be used. This work is called Coleshill, Maclor, Mold, Prestatyn, and Rhuddlan. The chief towns are Holywell; Flint, the county town, situated near the estuary of the Dee; Rhuddlan, famous for its ancient castle, the oldest English edifice in Wales; St Asaph's, the residence of the bishop of that see; and Mold, a busy town, engaged in mining transactions wholly. Population in 1881, 40,001.

FLOATING BREAKWATER. This marine contrivance may consist of a series of square frames of timber, connected by mooring chains, or cables attached to anchors, or blocks of marble. The framework is covered with yellow pine, from thirty to fifty feet long, and from eighteen to twenty inches square, bolted together very firmly, and increased in height as the situation may be boisterous, in order to break the violence of the agitated waves, and allow the vessels riding within these quadrangular basins more safety and protection. Such breakwaters are admirably adapted to bathing-places and swimming stations, since they will always produce smooth water, and protect the machines.

FLODDEN, a village in Northumberland, about twelve miles south of Berwick, near which was fought the celebrated battle of Flodden-field, in 1513. See Scotland, (History of).

FLOEFTZ. FORMATIONS. See Geology, and Geognosy.
FLOGEL—FLORENCE.

FLOGEL, CHARLES FREDERIC, a distinguished German scholar of the last century, was born 1729, at Jauer, in Silesia, studied theology in Halle, and, after several other appointments, was made professor at the academy for noblemen at Leignitz, where he remained until his death, in 1788. He published a History of the Human Understanding (Breslau, 1765; 3d ed. 1770); History of the Library in Germany (Jauer, 1771); History of Comic Literature (Leipzig and Leipzig, 1784—87, 4 vols.), a work of very great merit. It contains an essay on the comic and the ridiculous; a general history of comic literature; the history of satire; a description of the most eminent writers of the modern times; and a history of comedy in the widest sense of the word.

In the account of comic literature are contained, The History of the Comico-Grotesque (farcie at Christian festivals, comic feasts and comic societies), ibid. 1785; History of Court-Fools, ibid. 1789, second vol. of the preceding work; and the History of the Burlesque, which was published after the death of the author in 1794.

FLOOR TIMBERS, are those parts of the ship's timbers which are placed immediately across the keel, and supporting the outer planks; the lower members of these the upper parts of the timbers are united, being only a continuation of floor-timbers upwards.

FLORA (Latin; with the Greeks, Chloris): the goddess of flowers and blossoms, of grain and the vine.

She was the wife of Zephyrus (west wind), and is represented as a beautiful female, with a wreath of flowers on her head or in her left hand; in her right hand she generally holds a cornucopia. The Floraïdes were celebrated in her honour at Rome with much licentiousness.

In botany, Flora signifies a catalogue of plants, as, in zoology, Fauna signifies a list of animals.

FLORAL GAMES. See Jeux Floraux.

FROLEAL (month of flowers): the eighth month in the calendar of the French revolution. It began, April 20, and ended, May 10. See Calendar.

FLORENCE, (Italian, Firenze), capital of the grand duchy of Tuscany, and seat of the government, situated in a beautiful and fertile valley at the foot of the Apennines, 130 miles NNW. of Rome, and is unequally divided by the Arno into two parts, which are connected by four stone bridges. The climate is mild and healthy. Amidst the turbulence of the million, the most sedate degree of wealth and power which placed her far above all the neighbouring cities, and which, principally through the influence of the Medici, enabled her to render them her tributaries. The character of those times gave the city the appearance it still wears. The buildings are generally calculated for offence and defence, which the civil wars of that period rendered necessary; but, though the architecture is destitute of the peaceful elegance of the Grecian style, which Palladio revived in Vicenza and Venice, it is characterized by dignity, simplicity, and solidity. Such, for instance, are the palace Pitti, (seat and residence of the grand-duke, with the celebrated gallery), adjoining the Boboli garden, which is delightfully situated; the palaces Strozzi and Riccardi (formerly Medici); and the irregular old senate-house, in the principal square (Piazza del'Grande). It is to be regretted that the modern embellishments of the city are unfinished; but, in the interior, the architecture and decorations are generally executed in a highly finished style. The cathedral (la chétta politana), a gigantic fabric of the thirteenth century, the whole exterior of which is cased with black and white marble, and richly adorned with statues of Brunelleschi. By its side rises the graceful tower, from a design by Giotto; and opposite to it stands the ancient baptistery (battisterio), with brass doors, by Ghiberti and Andrea Pisano. The cathedral is described in the work La Metropoliitana Firentina illustrata (Flor., 1820). The church of St. Lorenzo contains the splendid but unfinished mausoleum of the princes, the monuments of the two Medici, with the celebrated statues of Day, Night, Twilight, and Dawn, which immortalized Michelangelo. In the adjoining convent is the Laurentian library, inestimable for its treasures in codices and manuscripts. The church of St. Croce contains, besides, a rich collection of monuments, both of ancient and modern art, the most magnificent collection of the ancient treasurers; among which are those of Michael Angelo, Machiavelli, Galilei and Alfieri.

The churches of St Mark, St Annunziata (which contains many works of Del Sarto), St Maria Novella (in which are the finest works of Cimabue and the earlier Florentines), St Spirito, St Trinita, are admirable monuments of art, and are adorned with some of the most beautiful fresco-paintings of ancient masters; among which those of Masaccio, in the church del Carmine, are still rich objects of study to the modern artist, as they had previously been to Da Vinci, Michael Angelo, and Raphael, &c.

All the palaces, also the private galleries and collections of works of art of every description. The palaces Corsini, Gerini, and particularly Pitti, which last has recovered the treasures that had been carried to Paris, and among them the Madame della Sedie, are rich in fine paintings. But not only these, but perhaps all the collections of Europe, are eclipsed by the gallery of the grand duke, which is equally distinguished for the number and value of the works it contains. (A collection of sketches from this gallery has been executed in 100 parts, by the conservators Zannoni, Maitaivi and Bargigl, under the direction of the Marquis de Riquelme. Of antique statues, some of the finest are the Venus de' Medici, the Two Wrestlers, the Young Apollo, the Dancing Faun, the Whetter, the Hermaphrodite, the Group of Niobe, Amor and Psyche, &c. Of the paintings, the finest are the works of Raphael (the Ferrarina, a holy family, John in the Wilderness, pope Julius II.); the Venus of Titian, paintings of Michael Angelo, Correggio, Fra Bartolomeo, &c., which are in the Tribune. An account of them is given in the Real Galleria di Firenze, inca in Cartoni (Flor., 1821). The collection of nearly four hundred portraits to a degree of excellence, of which themselves, is unique. There are also collections of antique and modern bronzes, medals, and valuable gems. All these treasures of art are gratuitously exhibited to every body, and are open for the use of students. The academy of fine arts, which, under the direction of Benvenuti and Raffaele Morghe, produces able artists, has an excellent gallery, chiefly composed of old Florentine paintings, that have been transferred from secularized convents and churches.

The literary institutions are not less celebrated. Here are a university, the Academia Delta Crusca, the academy of Georgioff, &c. Besides the Laurentian and many other private libraries, among which that of the grand duke contains the most valuable works of modern literature in all languages, there are the celebrated Marucelliana and Magliabecchiana, of which the latter is very rich in manuscripts of rare and ancient books. That part of the history, in forty rooms, contains large mineralogical, botanical, and zoological collections, and masterly anatomical preparations in wax, made by Clement Susini, under the direction of Fontana. In the hospitals of St Maria nuova and St Bonifacio, a large number of young pupils, under the careful guidance of professors and teachers, pursue the study of medicine theoretically and practically, and enjoy the benefit of medical
FLORIENTINE and its a
as close if point, places establishments of his
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FLORIDA; a country belonging to the United States of America, bounded N. by Alabama and Georgia, E. by the Atlantic, S. and W. by the gulf of Mexico. The northern part of the western boundary is formed by the Perdido, which separates it from Alabama. Florida formerly extended as far west as the Mississippi, the northern boundary being formed by St Mary's river from the ocean to its source, thence by a right line to the point where Flint river unites with the Appalachicola, thence up the Appalac.;if the body of water so delineated shall resemble that parallel to the Mississippi. The part lying between the Mississippi and Pearl is now included in the state of Louisiana, and the part between Pearl river and the Perdido, in the states of Mississippi and Alabama. The part east of the Perdido is under the territorial government of Florida. Lou. 80° 29' to 87° 20' W.; Int. 25° to 31° N.; length from N. to S., about 400 miles; average breadth, about 140; square miles, about 50,000. The principal towns are Tallahassee, the seat of government, Pensacola, St Augustine, New Smyrna, and St Marks. The most considerable rivers are St John's, Appalachicola, Indian river, Suwaney, and Conecuh. The principal island is Amelia island. The general aspect on the seashore is flat, sandy, and barren; further inland, it is marshy, abounding in natural meadows; a range of low hills extends through the peninsula. The river St John's, which has a course of upward of 300 miles, is a prominent feature of the country. The great swamp Oquaquepenogaw or Okefenokee, nearly 300 miles in circuit, lies on the north side, about half in Florida and half in Georgia. To the south of this are the Alachua savannas, a level and fertile tract, bare of trees and shrubs.

The lands of Florida, in their general character libraries, an anatomical theatre, botanical gardens, &c.

There are several theatres in Florence, two of which are commonly open. The grand opera and the ballet, both got up with splendour and taste, are represented in the theatre della Pergola, and the comic operas in the theatre del Cocomero. There are, besides, several theatres for the lower classes, and puppet-shows; the witty and amusing Pulcinello, mounted on a movable stage of light boards, plays his merry tricks in the streets by day and night.

The charms of a residence at Florence proceed not only from the sight of its present beauty, but also from the recollections of its past glory, the memorials of which surround you at every step. More powerful than the remembrance of its military glory, of its heroes in the middle ages, and the great council assembled here in 1478, is the reflection, that arts and sciences first revived here, and commenced the regeneration of Europe. The most celebrated names in Italian literature and art are of Florentine origin. Raffinement, genius, and taste rendered the age of Lorenzo de’ Medici one of the most brilliant in history, and took root so deeply as to be still conspicuous in the city where he ruled. The language of even the lower people is pure and graceful, and full of delicacy and expression. Generally speaking, the people are lively, polite, social, devout, and, like other Italians, fond of the theatre, but, in industry and dexterity, surpassing most of them.

There are celebrated silk-manufactures and dyeing establishments in Florence; its works in metal, coaches, piano-fortes, scientific instruments, the productions of its press, in short, all articles of luxury, are made here of exquisite workmanship; its commerce is considerable. Florence has a beautiful garden, and, viewed from an elevated point, seem to be sown with villas and villages, which, as Ariosto remarked, would make a second Rome, if they could be collected within a wall. A park, with a farm-house, called the Cascine, which lies close by the city, is crowded every evening, and particularly during the festivals, with fashionable visitors; and the villas of the grand duke, Poggi Imperiale, Careggi, Pratolino (with the statue of the Apennines), Poggio a Calanno, all of them richly adorned, both by nature and art, are also charming places for excursions. Florence is justly called la belle de l'Italie, and it hardly浃 comparable to the traveller. The Nuova Guida per la Città di Firenze (with views; Florence) is very useful to the traveller. Population between 70 and 80,000.

FLORENTINE WORK; a kind of mosaic work, consisting of precious stones and pieces of marble. The Florentines were distinguished for this kind of work—hence the name.

FLORIAN, JEAN PIERRE CLARIS DE, a graceful French writer, was born at the castle of Florian, not far from Sauve, in the Lower Cevennes. His predilection for Spanish literature was derived from his mother, Gilette de Salgues, a native of Castile. The taste for the age of chivalry and its customs, which animates the romantic poetry of the Spaniards, is clearly to be recognised in his works. An uncle of Florian had married a niece of Voltaire; his father was a friend of this celebrated author, and the author of the Henriade took pleasure in encouraging the talents of the son of his friend, who soon became his favourite. Florian entered the service of the duke of Penthièvre as page, and lived during the greater part of the year with the duke in Paris. D’Argental, a friend of Voltaire, whose house was the resort of artists and literary men, had a private theatre, where the first dramatic essays of Florian were represented. In these the author himself played the part of the harlequin. One of them, called Les deux Billets, is still a favourite. At the same time, he distinguished himself by his part in the operas, le Serf du Mont Jura, and the eulogy of Bons and Ruth. His Eloge of Louis XII, was less successful. In 1788, he became a member of the French academy. After the death of the duke of Penthièvre, he retired to Sceaux, in consequence of the decree banishing all nobles from Paris. While there, engaged in finishing his poem Ephraïm, he was arrested by the orders of the committee of public safety. The fall of Robespierre saved him from the guillotine, and gave one of his friends an opportunity to obtain his liberation; but his sufferings, and particularly the dreadful suspense which he had endured for a long time, had entirely exhausted him. He died, soon after leaving the prison, at Sceaux, September 13, 1794. As a poet, Florian exercised his talents successfully in more than one department. Facility, grace, harmony, and a sensibility rare in the French character, are the most striking characteristics of his works. In elevated subjects, he is deficient in fire, strength and colouring. His descriptions of manners are striking and faithful, particularly his pictures of pastoral life, as, for instance, in his favourite Estelle. As a writer of fables, he ranks immediately after La Fontaine. Voltaire called him by the tender name of Floriäner, which points in a striking manner the species of poetry to which the genius of Florian is adapted, and to which belong his Galatée (imitated from Cervantes), Fables, Contes en vers. His principal works are Estelle, Gondaze de Cordoue, Numa Pompilius, and, among his dramatic works, the above mentioned Deux Billets. His Don Quixote may be read as a French original. It is certainly interesting, however little it may be esteemed by later translators. The work did not appear until after the death of the author.

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The lands of Florida, in their general character
are light and sandy; and they are represented as not capable of subsisting so severe a season of exhausting crops. Considerable tracts, in different parts, are fertile; but far the greater part is sterile or unproductive. The lands have been divided into seven varieties:—1. Pine barrens, which constitute a great part of the country. They produce vast quantities of pitch pine and other pine trees in great variety, and a wiry grass, which yields sustenance to numerous herds of cattle. In wet seasons, orchards of peach and mulberry trees flourish remarkably well on these lands. 2. Hummock land. This variety, which constitutes the main body of good land, is so called from the hummocks or mounds among which the pines. Most of the uplands remote from the sea are of this kind, which is adapted to sugar-cane, cotton, indigo, potatoes, and pulse. 3. Prairies. These are of two kinds: one found in the pine barrens, being covered with sand, and sterile; the other on high ground, covered with wild grass. 4. Swamp. These are of two kinds—the river and inland swamps; the latter are the most valuable, producing large crops of rice, and, in some instances, the best cotton, corn, and indigo in the country. 5. Marshes. A part of these are occasionally covered with salt water, and a part with fresh water, from which the produce of wild rice is considerable. 6. A species of marsh, called galen, consisting of watery courses covered with spougy earth, and trembling like jelly for a considerable distance about the spot impressed. 7. Elevated grounds, covered with large trees of different species.

Florida abounds in vegetable productions in great variety, of most luxuriant growth. It is remarkable for the majestic appearance of its towering forest trees, and the brilliant colours of its shrubs. The pines, palms, cedars, and chestnuts grow to an extraordinary size and height. The laurels, especially the magnolias, are uncommonly striking objects, rising, with erect trunks, to the height of 100 feet, forming towards the head a perfect cone, and having their dark-green foliage slivered over with large milk-white flowers, frequently eight or nine inches in diameter. There are eight different kinds of oak, among which is one of fine growth, which, after forming a trunk from ten to twenty feet high, and from twelve to eighteen feet in circumference, spreads out its branches, in some instances fifty paces on every side. The cypress, generally growing in watery places, has large roots like buttresses, rising around its lower extremity; and then, resting a stem of eighty or ninety feet, it thins down to the thickness of a common umbrella, so that, often growing in forests all of an equal height, they present the appearance of a green canopy supported on columns in the air. Many rich fruits, particularly limes, prunes, peaches, grapes, and figs, grow wild in the forests. St John's river, and some of the lakes, are bordered with orange groves; and olives are cultivated with success. Some of the most important productions to which the country is well adapted are sugar, coffee, cotton, rice, indigo, tobacco, vines, olives, oranges, and various other tropical fruits. The waters contain various kinds of excellent fish, and they also abound in alligators and other lizards. The thermometer in summer usually stands between 84° and 88° of Fahrenheit in the shade, and, in July and August, frequently rises to 94°. The sun is scorching hot at noon. In winter it very rarely freezes, nor is the cold ever so severe as to injure the Chinese orange. From the end of September to the end of June, "there is not," says Volney, "perhaps, a finer climate in the world."

The name of Florida, from Pasqua Florida, or Palm Sunday, was given to this region by Juan Ponce de Leon, the Spanish discoverer, in 1512. For a long time, the name was applied in Spanish works, for the Atlantic coast of North America. The region now called Carolina was formerly included under Florida, and received the name Carolina from the French, who attempted to colonize it during the religious troubles in the reign of Charles IX. This colony was established incredible hardships, and was extirpated by the Spaniards, who sent out an expedition for this purpose in 1564. With many vicissitudes of fortune, Florida remained in the hands of the Spaniards till 1763, when it was ceded to the British government. In 1781, the Spanish king made war on the British; and, by the thirty-year treaty of Paris, 1783, the whole of both Floridas was ceded back by Great Britain to Spain. In 1819, negotiations were commenced between the United States and Spain for the cession of Florida to the former, and a treaty to that effect was entered into. This treaty was ratified by Spain, October, 1820; by the United States, February, 1821; and, in July of the latter year, Florida was finally taken possession of by general Jackson, by order of the government. Present population of Florida, about 35,000.

FlORIDA—Florida Blanca (Francisco Antonio Monino) count of; Spanish minister in the reign of Charles III.; a man distinguished for his great services and enterprises in the cause of Spain, but destined also to experience a great reverse of fortune. His family name was Monino. He was born in 1730, at Murcia, where his father was a notary, studied in the university of Salamanca, and soon rendered himself so conspicuous, that he was intrusted with the important post of Spanish ambassador at Rome during the pontificate of Clement XIV. In that office, he displayed great ability in several emergencies. He particularly distinguished himself by his activity in the abolition of the order of Jesuits, and in the election of Pius VI. Charles III., finding himself obliged to dismiss Grimalki, the minister of foreign affairs, desired him to nominate his successor. Grimalki recommended Monino, who was accordingly created count Florida Blanca, and received the designation of secretary of foreign affairs, together with that of justice and acts of grace, and the superintendence of the posts, highways, and public magazines in Spain; so that his authority was almost unlimited. He introduced post-coaches, and caused the post-roads to be made practicable; directed his attention to the modern improvement of the naval police, particularly in the capital; embellished Madrid, and was on every occasion the active friend of the arts and sciences. He endeavoured to confirm the good understanding which existed between the courts of Spain and Portugal, by a double intermarriage (1783). His attempt, however, to secure the succession to the throne of Portugal to a Spanish prince, proved abortive. The military enterprises which he projected, the attack upon Algiers (1777), and the siege of Gibraltar (1782), were unsuccessful. A short time before the death of king Charles III. (October, 1788), he requested permission to retire, and presented to the king a justification of his ministerial career. The king expressed himself satisfied with the latter, but refused to accept his resignation. After the accession of Charles IV., however, his enemies, among whom was the prince of peace, succeeded in effecting his disgrace (1792). He was imprisioned in the citadel of Valencia, but was soon restored to liberty, and banished to his estates. In 1808, he appeared once more upon the political theatre, at the time of convening the cortes, but died November 20 of the same year, at the age of nearly eighty years.
FLORIN—FLOWERS.

FLORIN is sometimes used for a coin, and sometimes for a money of account. The florin coin is of copper, valued at half a guilder, or fourpence, though the most of the smaller coins of a country alloy, some of them not exceeding thirteen or fourteen carats, and none of them seventeen and a half. As to silver florins, those of Holland are worth about 1s. 8d. See Coin.

FLORIS, FRANCIS, a painter, whose family name was Viändt, was born at Antwerp in 1520. He was called M. Floris' contemporaries the Raphael of Flanders. He studied the art of painting under Lombard, at Liege. The pupil soon surpassed his master. After his return to Antwerp, Floris established a school for painters in that city. He afterwards went to Italy, where his taste, particularly in design, was improved by the study of the masterpieces of Michael Angelo; but he never equalled the grace and purity of form which distinguished the Florentine and Roman masters. His style was grand; but his colouring and his figures are reproached with dryness and stiffness. After his return to his native country, he was engaged to execute important works, and some accounts of his fortune, which he squandered by his excesses. He boasted of being the boldest drinker of his time, and, to sustain his reputation, drank on the most extravagant wagers. He composed with remarkable ease. His intemperance brought him to an early grave. He married Flanders, and, in particular, his triumphal arches, made on the occasion of the entry of Charles V. and Philip II. into Antwerp, and his twelve labours of Hercules, have often been engraved by skilful artists. His paintings are to be met with in Flanders, Holland, Spain, Paris, Vienna, and Dresden. He died in 1570. Few artists have had so many disciples. He had more than 130, amongst whom were his two sons; one of whom, Francis Floris, has some celebrity as a painter.

FLORUS, LUCIUS ANNÉUS; a Roman historian, was probably a native of Spain or Gaul. He lived in the beginning of the second century after Christ, and wrote an abridgment (epitome) of Roman history in four books, from the foundation of the city to the first time of closing the temple of Janus, in the reign of Augustus. His style is florid, and not sufficiently simple for history. Some are of opinion that the work of Florus belongs to the age of Augustus, but others think that it has come down to us with interpolations in facts and language. The only European whose name is that of Duker (Leyden, 1744); later ones are by Fischer (1700), and Titze (1819).

FLOS, in chemistry; the most sublime parts of bodies, separated from the more gross parts by sublimation, in a dry form.

FLOTSAM, JETSAM, and LAGAN, in law. Flotsam is when a ship is sunk or cast away, and the goods float on the sea; jetsam is when a ship is in danger of being sunk, and, to lighten the ship, the goods are thrown overboard, and the ship, notwithstanding, perishes; and lagan is when the goods so cast away into the sea are heavy that they sink to the bottom, and therefore the mariners fetch them to a buoy or cork, or such other thing as will not sink, to enable them to find them again.

FLOURISH; an appellation sometimes given to the decorative notes which a singer or instrumental performer adds to a passage, with the double view of evincing the effect of his parts, and of displaying his own flexibility of voice or finger. There is nothing of which a sensible performer will be more cautious than of the introduction of flourishes, because he is never so much in danger of mistaking; as when he attempts to improve his author's passages. If performers of little taste, plain passages are indiscriminate invitations to ornament; and too frequently in the florish, the beauty of a studied simplicity is at once overlooked and destroyed. Auditors who are fonder of execution than of expression, are more alive to flatter than to amend, applaud these sacrifices to vanity; but those who prefer nature to affectation, and listen in order to feel, know exactly how to value such performers.

FLOWER-CLOCK is a contrivance for measuring time by means of flowers.—Flowers, it is well known, open and shut according to the state of the atmosphere, or according to the length of the day. Some, however, open at certain hours of the day, as, for instance, early in the morning or in the evening, and thus afford the means of indicating the time. If, for instance, flowers are chosen which regularly open one hour, and then shut again, and others, that open and shut the next hour, are placed beside the former, and so on until sunset, we have a time-piece of flowers.

FLOWER DE LIS, or FLOWER DE LUCE, in heraldry; a bearing representing the lily, called the queen of flowers, and the true hieroglyphic of royal majesty and glory, and therefore the emblem of being borne in some coats one, in others three, in others five, and in some semeé, or spread all over the escutcheon in great numbers.

FLOWERS, ARTIFICIAL; a considerable article of French manufacture. They were first made at Paris, for Sienna, for Flanders, and other towns in Italy, were for a long time the only places where this manufacture flourished. At present, the best artificial flowers are made at Paris, Lyons, Bourdeaux, Rouen, Nantes, and Marseilles, with astonishing skill and taste, and exact imitation of nature. They are worn in the hair, in bonnets, &c. In former times, in the height of the fashionable rage for porcelain, flowers of all kinds were made of porcelain, and the odour of the real flowers imitated by means of perfumes; but they are now little esteemed.

FLOWERS, in chemistry; a term formerly applied to a variety of substances procured by sublimation, in the form of slightly cohering powder; hence, in all old books, we find mention made of the flowers of antimony, arsenic, zinc, and bismuth, which are the sublimed oxides of these metals, either pure or combined with a small quantity of sulphur; we have also in use, though not generally, the terms flowers of sulphur, flowers of bismuth, &c.

FLOWERS, LANGUAGE OF. In the youthful and imaginative period of nations, flowers, as well as colours, and other objects of sense, often have particular symbolical significations attached to them. Who does not know that the rose is the flower of Venus, the flower of love? Who does not remember the sad passage of Shakspeare, where rosemary, the flower of widows and of mourning for the departed, is so happily introduced? In Asia, where the imagination is livelier and less checked by intellectual cultivation than in Europe, and where the art of writing is not generally practised, the language of flowers has acquired a more distinct character. The significations of flowers has become more distinctly fixed, and the art of combining them, so as to express not only a single idea, but connected thoughts, has grown up. The exclusion of women in the East, and their ignorance of writing, * connected with their lively imagination, caused every object, must be considered as the chief cause of the invention of this

* Doctor Madden, in his Travels in Turkey, Egypt, Nubia, and Palestine (London, 1828, Philad., 1830), says, "In my time, I seldom met one who could read and write, and that was in Danietiis; she was a Levantine Christian, and her peculiar talent was looked upon as something superhuman."
FLOWERS OF ANTONY—FLUE.

Language. Whoever has seen a lively Italian girl make an appointment with her lover, by describing a circle with her finger to represent the sun, and then making the sign of two, or any other number, to indicate a places mean after he has left her, before she goes to rise, according as the figure is made on one or the other side of the circle, will not be surprised that the ladies of the East can carry on a correspondence by means of flowers. It is true they can only convey general ideas; but, the girl says, "my life is so varied, that they have little else to convey. The bouquet, which is used as a letter, is called selam. The language of flowers is, of course, arbitrary, and a bouquet which a Persian girl would understand, would be unintelligible to an Egyptian or a lady from the Sarmatian tribes. The charm of novelty has sometimes attracted attention in the West to this tender language, and dictionaries have been composed to explain its mysteries. But the European races are too much matter-of-fact people to find pleasure in the habitual use of these emblems, which are, moreover, marked by so many accidentitious; for ideas spring up in active and intellectual society. Madden, in the work already mentioned, says, "A Turkish lady of fashion is wooed by an invisible lover. In the progress of the courtship, a hynacht is occasionally dropped in her path by an unknown hand, and they thus pass the offer of a Mercury, and talks of a certain festend seeking a lady's love, as a nightingale aspiring to the affection of a rose." In the Oriental language of flowers, the same plant, under different circumstances, receives different senses; for instance, a rose without thorns means we may hope ever thing; whilst a rose without leaves means there is no hope. In the works on this subject, published principally in Germany and France, there is less delicacy of shading in the expression. The Germans have a very old proverb, Durch die Blume sprechen (to speak through flowers), which means to speak indirectly and darkly. The English phrase to speak under the rose means, to speak under condition of secrecy.

FLOWERS OF ANTONY. See Antimony.

FLOWERS OF SULPHUR. See Sulphur.

FLOWERS, Painting of, in the art of painting; the representation of flowers, especially of a particular kind, is a point of great perfection. The highest perfection of such productions is accuracy, and they belong, therefore, to a subordinate branch of the art. The most celebrated flower-painters are Huysum, Rachel Ruysch, Schipper, Verendael, Mignon, Roupell, Dressler. See also in winter.

FLOWER TRADE in Holland. Haarlem was formerly the centre of this trade. In 1636 and 1637, a real tulip mania prevailed in Holland. Bulbs, which the seller did not possess, were sold at enormous prices, on condition that they should be delivered to the purchaser at a given time. 13,000 florins were paid for four and a half bulbs; three of them together, 30,000 florins; for 148 grams weight, 4500 florins; for 296 grams of admiral-Liefkenheoek, more than 4000 florins; for admiral-Enkhuizen, more than 5000 florins. For a vicerey, on one occasion, was paid in particular hours, 8 tons of rye, 4 fat oxen, 8 pigs, 12 sheep, 2 hogs of wine, 4 lbs. of beer, 2 lbs. of butter, 1000 lbs. of cheese, a bundle of clothes, and a silver pitcher. At an auction in Alcmaer, some bulbs were sold for more than 9000 florins. An individual in Amsterdam gained more than 60,000 florins in this trade in 10 months. In the provinces of Holland, it is said, more than 10,000,000 tulip bulbs were sold. But when, on account of the purchasers refusing to pay the sums agreed upon, the states-general (April 27, 1637) ordered that such sums should be exacted, like other debts, in the common way, the extravagant prices fell at once, and a semper-Augustus could be had for 50 florins; yet the profits of raising rare tulips were afterwards considerable; and, even at present, we find the price of a single bulb, 250 florins, the price of a single flower, 10 florins. The catalogue of tulip bulbs was produced by the Haarlem florists. Until the time of the French revolution, the florists of Haarlem obtained their bulbs principally from Lisse, and other towns in Flanders, where the clergy were engaged in raising them. The carriers continued to engage in the same business; but the whole has now of little importance. Even after the decline of this trade, Alcmaer, did not lose its reputation for possessing the first amateurs and connoisseurs in flowers.

Persons in independent circumstances engaged in cultivating flowers, particularly hyacinths. Florists obtain their supplies, not only of lycynthus, but also of nunmuculves, auricula, pinks, anemones, &c., the demand for which has been gradually increasing, partly from that source, and partly from foreign countries. Haarlem still continues to be the emporium for the most beautiful of these flowers, and the tulip flower begins to rise in estimation in 1770. In that year, 1850 florins were paid for passe-non-plus-ultra, and in the same proportion for others. Between Alcmaer and Leyden there are more than twenty acres of land appropriated to hyacinths alone, which thrive best in a loose and sandy soil. There are but a few great florists in and around Haarlem, besides a number of lesser importance. They send their flowers to Germany, Russia, England, &c., and even to Turkey and the cape of Good Hope.

FLOWING; the position of the sheets or lower corners of the principal sails, when they are loosened to the wind, so as to receive the more nearly parallel and oblique, or when they are close-hauled, although more obliquely than when going before the wind. A ship is, therefore, said to have a flowing sheet, when the wind crosses the line of her course nearly at right angles; that is to say, a ship steering due north, with the wind at the east, or directly on her side, will have a flowing sheet; whereas, if the sheets were extended close aft, she would sail two points nearer the wind, viz., N. N. E.

FLUVATES, in chemistry; salts first discovered by Scheele, et al. They are compounds of fluorine and anhydrous fluoric acid; when fluorine is dissolved in water, it forms fluoric acid; when fluoric acid is dissolved in water, it forms fluoric acid. They are decomposed by heat, not altered by combustibles. They combine with silica by means of heat. Most of them are sparingly soluble in water.

FLUE, Nicholas von der, a Swiss statesman, celebrated for the purity of his life, was born in the village of Saxon, in the canton of Unterwalden. In several military expeditions, he exhibited no less humanity than valor; and, as counsellor of his canton, he was equally distinguished for wisdom and prudence. The dignity of landaman, which was offered to him, he declined. From his youth, he was inclined to a contemplative life, and was abstemious and austere in his habits. At the age of fifty, after having faithfully fulfilled the duties of a good citizen, and become the father of ten children by the wife he married, with the consent of his wife, to quit the world, and live, in future, in solitude. He chose for his residence a solitary spot, not far distant from Saxon, which was enlivened only by a waterfall. There he spent his time in prayers and pious meditations. His reputation was increased by the report that, he lived without food, except the Lord's supper, of which he partook once a month. All who stood in need of counsel or consolation had recourse to him, as an experienced and judicious adviser. He soon became the benefactor of the whole country. Jealousy and distrust...
had risen among the eight cantons which, at that time, composed the Swiss confederacy. It was suspected that the booty taken from the Burgundians, defeated a short time previous at Nauck, had not been faithfully divided; the laterocrate townsmen, not content, as I wished to receive Freyburg and Soleure into the confederacy, to which the smaller democratic cantons were opposed. An assembly of the deputies of the confederate cantons, which was held at Stantz (the capital of the canton of Unterwaldean), in 1481, for the purpose of taking these important steps, was attended by the most violent debates. The dissolution of the confederacy, and, with it, the ruin of the liberty of Switzerland, which must have been the inevitable consequence, seemed at hand. At this crisis, brother Claus, as Nicholas was now called, appeared in the assembly of the deputies. His great reputation, his lofty and dignified appearance, which seemed to bespeak a messenger from heaven, his conciliating but powerful language, in which he painted the dangers of separation, and exhorted to union, produced such an impression on the assembly, that a compact, favourable to the confederacy of Stantz, was immediately entered into (Dec. 22, 1481); all differences were composed. Freyburg and Soleure were received into the confederacy, and the liberty of Switzerland was saved. Brother Claus, after having completed this work, returned, amidst the blessings of his fellow citizens, to his cell, where he continued teaching virtue and wisdom, till his death, May 22, 1457, at the age of seventy years. All Unterwalden followed his body to the tomb, and all Switzerland mourned his death; foreign princes honoured his memory; and, in 1671, Clement X. caused him to be beatified.

FLUID, in physics, the flowing quantity, or that which is continually increasing or decreasing, whether line, surface, solid, &c. See Calotus.

FLUIDITY, the state of bodies when their parts are very readily movable in all directions with respect to each other. Many useful and curious properties arise out of this modification of matter, which form the basis of the mechanical science called hydrostatics, and are of considerable importance in chemistry. But the attention of the chemist is chiefly directed to the state of fluidity, as it may affect the component parts of bodies. A solid body may be converted into a fluid by heat. The less the temperature at which this is effected, the more fusible the body is said to be. All fluids, not excepting the fixed metals, appear, from various facts, to be disposed to assume the elastic form, and this the more readily the less the fluid is heated to such a degree that its elasticity is equal to the pressure of the air, its interior parts rise up with ebullition. The capacity of a dense fluid for caloric is greater than that of the same body when solid, but less than when in the elastic state. If these were not the case, the assumption of the fluid and elastic state would be scarcely at all progressive.
but effected, in most cases, instantly as to sense. (See Caloric.) The state of dense fluidity appears to be more favourable to chemical combination than either the solid or elastic state. In the solid state the active elements act from obeying their chemical tendencies; and, in the elastic state, the repulsion between the parts has, in a great measure, the same effects. Hence it has been considered, though too hastily, as a chemical axiom, that corpora non agunt nisi fluida.

FLUIDS, Motion of. The motion of fluids, viz., their successions, or sequences, may either be observed on the common surface or level of the source or fountain, is caused either, 1. by the natural gravity or pressure of the fluid contained in the reservoir or fountain; or, 2. by the pressure or weight of the air on the surface of the fluid in the reservoir, when it is, at the same time, either taken off or diminished, on some part, in aqueducts or pipes of conduit; 3. by the spring or elastic power of compressed or condensed air, as in the common water engine; 4. by the force of pistons, as in all kinds of forcing pumps, &c.; 5. by the power of attraction, as in the case of tides, &c.

In the dense state the fluids are incompressible and of hard structure. The crystals and crystaline masses of this mineral, when so cleaved as to improve all its cleavages in an equal degree, result in regular octahedrons, which figure is therefore assumed as the primitive form of the species. It presents an extensive variety of crystals, of which the cube and the cube-octahedron are the most frequent, the primitive form being comparatively rare. They vary, in size, from very minute to several inches in diameter. Lustre, vitreous; colour, white, though not very common, and seldom pure; more generally wine-yellow or violet-blue. Among its brightest colours are emerald and pistachio-green, sky-blue, rose-red and crimson-red. Very dark blue colours, bordering on black, and probably owing to foreign admixtures, sometimes occur. Sometimes different shades of colours are disposed in coats parallel to the faces of the cube, or symmetrically distributed along the edges or solid angles of crystals. Translucent as well as transparent; brittle; hardness, between apatite and aragonite, and capable of being scratched with ease by the knife; specific gravity, 3.14. Besides occurring in well-defined crystals, it often appears massive, in which case the composition is columnar, the particles being of considerable size, sometimes diverging, but more often forming a cubic, lamellar, or cubic-octahedral aggregate. Its hardness is also granular, the individuals being of various sizes. It is likewise, though more rarely, impalpable, the fracture becoming flat, conchoidal and splintery, and the surface of fracture being scarcely glimmering. Fluor is composed of 72.14 of lime, and 27.86 of fluoric acid. Before the blow-pipe, it decrepitates, and becomes phosphorescent, but loses its colour, and melts, at last, into an opaque globule. It phosphoresces likewise, if thrown upon ignited charcoal or heated iron. The light emitted is generally purple, though some varieties affords bright green colours. In consequence, they have received the name of chlorophane, or pyromaragud. A variety of this latter kind, from Ecatenberg, in Russia, phosphoresces simply from the warmth of the hand. If fluor be exposed to too high a temperature, it loses the property of again showing this phenomenon. Sulphuric acid decomposes the powder of the mineral; fluoric acid is dec­omposed by water. This gas is almost invisible. Several varieties, particularly the sky-blue and rose-coloured ones, lose their colour on exposure to the light. Fluor is not unfrequently found in beds, as at Alston Moor and Castleton, in England; more generally, however, it occurs in veins in argillaceous slate and secondary limestone, accompanied by galena.
This gas has received the name of fluoric acid, because it is regarded as a compound of fluoric acid and silica. A better mode of procuring it, however, is to mix a suitably heated prepared glass, and, introducing the mixture into a glass retort, to add sulphuric acid, and apply a moderate heat; the gas will make its appearance in abundance, and may be received in glass jars over the mercurial bath. It is about forty-eight times denser than hydrogen. When brought into contact with water, the substance, deposited in a white, gelatinous mass, which is a hydrate of silica. It produces white fumes when suffered to pass into the atmosphere. From the strong affinity of fluoric acid for silica, it cannot be preserved in glass bottles; and is therefore kept in vessels of lead or silver. For the same reason, fluoric acid is employed for etching on glass—its only important application. The glass is covered with a thin coat of wax, or is brushed over with a solution of isinglass in water; and, when this is dried, lines are easily traced by a graver. It is then exposed to the action of the acid in the state of gas; the gas of the glass thus exposed are soon eroded, the impression being more or less deep, according to the time during which it is exposed. Such a method, were it possible to obviate completely the defect from the brittleness of glass, has, from the hardness of that substance, the important addition of this power, that masses that are not become less delicate from the fineness of the lines being diminished by the pressure in throwing them off. Different methods have been proposed to render the method practicable; and engravings, though not of much delicacy, have even been taken. As all other acids are compound, Gay-Lussac and Thénard conceived the fluoric acid as such also, and adopted the opinion that it is composed of a certain combustible body and oxygen gas. They accordingly attempted to decompose it by means of some substance which has a strong affinity for oxygen, and employed potassium for that purpose. When that metal is brought into contact with fluoric acid, a violent action ensues, accompanied with an explosion, unless the experiment is cautiously conducted. Hydrogen gas is disengaged, and a white solid is produced, which has all the properties of fluote of potash; the explanation of which, given upon this view of the hydrogen arising from the decomposition of water, that the oxygen of that fluid combines with the potassium, and that the potash so formed unites with the fluoric acid. They infer, therefore, from their experiments, that the strongest fluoric acid hitherto prepared contains water.

On the other hand, Sir H. Davy contended that fluoric acid, in its strongest form, is anhydrous; for, on combining it with ammonical gas, a dry fluote of ammonia is formed, from which no water can be expelled by heat. He maintained, also, that fluoric acid is composed, not of an inflammable base and oxygen, but of hydrogen united with a negative electric body, analogous to chlorine, to which he has given the name of fluorine. According to this view, when the metal potassium is brought into contact with fluoric acid, the hydrogen is not derived from water, but from the acid, and the supposed fluote of potash is a compound of fluoric of and potassium. The facts of this view are eighties of the evidence of either theory, although the arguments upon which they depend are thought, by the majority of chemists, to preponderate in favour of the view proposed by Sir Humphrey Davy.

Fluoric acid forms salts by uniting with several bases; the fluotes have hitherto been found native; viz., the fluotes of fluoric acid, or topaz, the fluote of cerium, and the double fluote of cerium and yttria, and the double fluote of soda and alumine, or cryolite. The four latter are very rare minerals, but the first is abundant. Potash unites with fluoric acid in two proportions, a fluote and a bifluote, the former of which consists of one atom and the latter of two atoms of acid united with one atom of the alkali. A neutral fluote of soda may be obtained directly from fluoric acid and carbonate of soda. It melts with more difficulty than glass; 100 parts of water, at 218° Fahrenheit, dissolve only 4.3 of it. Neutral fluote of ammonia is more volatile than sal-ammoniac. It is easily obtained by heating one part of dry sal-ammoniac, with a little more than two parts of fluote of soda, in a crucible of platinum, with its lid turned upwards. The earthy fluotes are best formed by digesting their recently precipitated moist carbonates in an excess of fluoric acid. That of barytes is slightly soluble in water, and readily in muriatic acid. The neutral fluotes of fixed bases are fusible at a high temperature, and are not decomposed by heat and combustible matter; nor does any acid, excepting the boric, effect their decomposition, provided they are free from moisture. When digested, on the contrary, in concentrated sulphuric, phosphoric or arsenic acids, the fluoric acid is disengaged, and may be recognised by its property of corroding glass. If, instead of glass, the flour-spar is used, the fluoric acid may be mixed with solutions that are of different proportions, it is reduced in a glass vessel with sulphuric acid, the proportions being 1 part boric acid, 2 fluoric acid, and 12 sulphuric, the gaseous substance formed is of a different kind, and is called fluo-boric. Its density to that of air is 2.371 to 1.00. It is colourless and pungent. It cannot be breathed without suffocation. It extinguishes combustion, and reddens vegetable blues. It has no action on glass, but a very powerful one on vegetable and animal matter, converting them into a carbonaceous substance. It has a singularly great affinity for water. When it is mixed with air, or any gas which contains water vapour, a dense white cloud appears, which is a combination of water and fluo-boric acid gas. From this circumstance, it forms an exceedingly delicate test of the presence of moisture in gases. Fluo-boric acid gas is rapidly absorbed by water. When potassium is heated in fluo-boric acid gas, a liquid results, which, if free from impurities, is wholly devoid of metallic lustre, is the sole product. On putting this substance into water, a part of it dissolves, and a solution of fluote of potash is obtained, the insoluble matter being boric. Accordingly, fluo-boric acid gas is inferred to be a compound of fluoric and boric acids. It unites with ammonical gas in three proportions, forming salts, one of which is solid, and the two others liquid. Other compounds of this acid, with salifiable bases, are scarcely known.

FLUSHING (Vliesingen), a well fortified city on the south side of the island of Walcheren, belonging to the province of Zeelando, to the province of Zeeland of the Netherlands, lies at the mouth of the Western Scheldt, and is connected with Middleburg, by a canal. Population, 4600. Flushing is the seat of an admiralty office, and of the marine department of the Scheldt. The greatest curiosity is the new harbour, its name is the same as that of a town on the coast. It is on the eastern side of the city, with two jetties projecting far into the sea. A commandant of the third class resides here. There is also a scientific academy here. It is the native place of admiral De Ruyter (q. v.), and the spot where the first shots, which revolted against Spanish, were fired. It has a brisk commerce with the East Indies. Lat. 51° 56' 42" N.; long. 3° 34' 57" E.
FLUTE; a portable, inflated instrument, blown with the breath, and consisting of a tube, box of ivory, furnished with holes at the sides, for the purpose of varying its sounds. Its name is derived from the word *flute*, the Latin name of the lamprey, or small eel taken in the Sicilian seas, because, like that fish, it is long and perforated at the side. The flute was in great esteem with the ancient Greeks and Romans. See *Tibia*.

**Flute, Common;** a wind instrument, consisting of a tube about eighteen inches in length, and one inch in diameter, with eight holes disposed along the side, by the stopping and opening of which, with the fingers, the sounds are varied and regulated. This instrument was sometimes called the *flet de bec*, from the word *beoc*, signifying the beak of a bird, because the end at which it is blown is formed like a beak. It is now indifferently called the *common flute* and *English flute*, partly to distinguish it from the German flute, and partly from the supposition that it is of English invention—a fact, however, not ascertained.

**Flute, German, or German Flute;** a wind instrument of German invention, consisting of a tube formed of several joints or pieces screwed into each other, and holes disposed along the side, like those of the common flute. It is stopped at the under end, and furnished with movable brass or silver keys, which, by opening and closing certain holes, serve to temper the tones to the various fists and sharps. In playing this instrument, the performer applies his under lip to a hole about two inches and a half from the upper extremity, while the fingers, by their action on the holes and keys, accommodate the tones to the notes of the composition.

**FLUTES (French),** in architecture; channels or furrows cut perpendicularly in the shafts of columns. Pluting the shafts of columns is a practice never omitted in any great and finished Greek work. It therefore seems probable, that it had some relation to the original type; perhaps the furrowed trunk might have suggested the idea. It is, however, a beautiful ornament, which is applied with equal happiness to break the otherwise heavy mass of a Doric shaft, or to create an inconstant plinthes in the other orders.

**FLUX;** a general term made use of to denote any substance or mixture added to assist the fusion of minerals. In the large way, limestone and fluor-spar are used as fluxes. The fluxes made use of in assays, or chemical experiments, consist of alkaline fluxes, which render the earthy mixtures fusible by converting them into glass. Alkaline fluxes are either the crude flux, the white flux, or the black flux. Crude flux is a mixture of nitre and tartar, which is put into the crucible with the mineral intended to be fused. The denotation of the nitre with the inflammable matter of the tartar is of service, in some operations, though generally it is attended with inconvenience, on account of the swelling of the materials, which may throw them out of the vessel. White flux is formed by projecting equal parts of a mixture of nitre and tartar, by moderate portions at a time, into an ignited crucible. In the denotation which ensues, the nitric acid is decomposed, and flies off with the tartaric acid; and the remainder consists of the potash, in a state of considerable purity. This has been called *fixed nitre*. Black flux differs from the preceding in the composition of its ingredients. In this, the weight of the tartar is double that of the nitre, on which account the combustion is incomplete, and a considerable portion of the tartaric acid is decomposed by the mere heat, and leaves a quantity of coal behind, on which the black colour depends. It is used where metallic ores are intended to be reduced, and effects this purpose by combining with the oxygen of the oxide.

**FLUXIONS, see Calculus.**

**FLY;** the name of a very troublesome insect belonging to the genus *musca* of naturalists. During the summer and autumn much inconvenience is suffered from flies, which settle upon every light-coloured object. The common house-fly is an absolute cosmopolite, as there has been no part of the world, yet visited, where it was unknown; and, in some countries, it exists in such quantities as to create a serious evil. It preys upon every description of animal and vegetable matter, always preferring such as is in a state of putrefaction. Flies are useful as agents in the decomposition of organic substances, which act gradually by their numbers. The flesh-fly deposits its eggs upon animal matter in a state of incipient putrefaction. The *larvae* or maggots, upon being hatched, devour the substance in which they are placed, and, by a wise provision of nature, assume the *pupa* state about the time their nourishment is exhausted. Flesh-flies are gifted with an extraordinary sense of smell, by which they are enabled to discover the offensive objects, upon which they delight to feed, at great distances. By this they are frequently attracted to flowers which have a disagreeable smell. They are usually found near horses and cattle during the summer months, were also arranged, by Linnæus, in his great genus *musca*, but now form a subgenus (stomoxys), which differs from the true flies in having the mouth furnished with a peculiar proboscis, which, when at rest, is carried bent horizontally, but which, when about to sting, the insect places perpendicularly, and pierces the skin, immediately producing a very sharp and disagreeable sensation. In the genus *tabanus*, the large black horse-fly is arranged; and into this genus also several other species of flies are referable. Flies are observed to be very active previous to rain, and, during its continuance, enter houses in great numbers, proving a source of great trouble and annoyance to the inmates, in soiling books, paper, furniture, &c. A variety of methods have been recommended for their dispersion, few of which, however, are of much avail. A mixture of molasses and water, in a covered vessel, having a small opening cut in the top, is perhaps the best. A solution of corrosive sublimate is also effectual, but its poisonous quality makes it too dangerous to be carelessly exposed.

**FLY;** a name given to a certain appendage to many machines or apparatuses, as a bar, or a number of bars, or as a collector of power. When used as a regulator, the fly is commonly a heavy disk, or hoop, balanced on its axis of motion, and at right angles to it; though sometimes a regulating fly consists of vanes or wings, which, as they are whirled round, meet with considerable resistance from the air, and thus soon prevent any acceleration in the motion; but this kind of regulator should rarely, if ever, be introduced in a working machine, as it wastes much of the moving force. When the fly is used as a collector of power, it is frequently seen in the form of heavy knobs at the opposite ends of the straight bar, as in the coinage press.

**FLY-CATCHER.** The birds which constitute this class are exceedingly numerous, and have given rise to great difficulties as to their scientific arrangement, no two authors agreeing in their ideas on the subject. They have received the generic name of *tyranus*, with the exception of some of the larger species, known by the name of *tyrant*, which the latter placed in his genus *tanarius*. In this, he was followed by Gmelin and Latham, who augmented the genus by adding many species. Lancepède divided them into three genera, according to the size of the
FLYING—FO.

birds, calling the largest tyrannus; the next, muscicapoe; and the smallest, muscicapa. Cuvier, in his last edition, forms them a subgenus, under the names of tyrannus, muscicapeta, and muscicapoe, though he also admits several genera and subgenera, as appertaining to this class. Temminck divides this great genus into two, muscicapeta, nearly resembling Cuvier's subgenus of the same name, and muscicapoe. The present work divides them into three subgenera, dividing it into larger species, including the tyrannus of authors, and smaller species, the muscicapoe, muscivora, and muscicapeta of authors. These birds are widely distributed over the globe, abounding where insects are most numerous, and are of infinite use in destroying those numerous swarms of noxious insects, engendered by heat and moisture, which are continually on the wing. These, though weak and contemptible when individually considered, are formidable by their numbers, devouring the whole produce of vegetation, and inducing the accumulated illis of pestilence and famine. The habits of these birds are taciturn, solitary, and untamable. They perch on the highest branches of trees, whence they watch for insects, and take them on the wing with great quickness.

FLYING; the progressive motion of a bird, or other winged animal, in the liquid air. The parts of birds chiefly concerned in flying, are the wings, body, head, and tail, attached or perpendicularly along the body. The manner of flying is thus:—The bird first bends his legs, and springs with a violent leap from the ground, then opens and expands the joints of its wings, so as to make a right line perpendicular to the sides of its body; thus the wings, with all the feathers therein, constitute one continued lamina. Being now raised a little above the horizon, and vibrating the wings with great force and velocity perpendicularly against the subject air, that fluid resists those successions, both from its natural inactivity and elasticity, by means of which the whole body of the bird is propagated. The resistance which the air makes to the withdrawing of the wings, and, consequently, the progress of the bird, will be so much the greater, as the waft or stroke of the fan of the wing is longer.

FLYING-FISH; the exocetus of naturalists; a fish which is enabled, by the vibration of its large pectoral fins, to leave the water when alarmed or pursued, and to fly for many seconds in the air. In tropical seas, the flying-fish rise from the water in flocks, or, more properly, shoals, of many thousands at a time, when disturbed by the passing of a ship, or pursued by its invertebrate foes, the dolphin and abicore. They spring from the crest of a wave, and, darting forward, plunge into another, to wet the membrane of the fins, and in this manner continue their flight for several hundred yards, often pursued by marine birds in the element to which they are driven for protection against the tyrants of their own. In all the species belonging to the genus exocetus, the pectoral fins are very much developed, and support, if the animal is then in a vertical line, short; the head and body are invested with large soft scales, and the body has a ridge or carina, extending longitudinally along each side, which gives it somewhat of an angular appearance. Head, when viewed from the front, triangular; eyes, very large; teeth, minute; branchiostegous rays, ten; air-bladder, very large. Flying-fish are inhabitants of every temperate sea, though abounding in the vicinity of the equator. In length, they rarely exceed thirteen inches, and are commonly found about eight. The fish is pleasant, and much re-sented on the table, fresh, when properly caught. Several species are described by naturalists, some of which have very long, fleshy filaments, depending from the lower jaw, the use of which is not known. The exocetus velanius, or common flying-fish of the Atlantic, bears some resemblance to the E. exilissus, which is found in the Mediterraneo, but differs in having small ventral fins inserted behind the centre of the body. The rapidity and force with which these fish move through the air by the aid of their pectoral fins, are such, that, in coming on board ships, they are generally killed by the violence with which they strike, and, in some cases, the head is fractured, and beaten to pieces. In the gulfs of Mexico are found several species with curious appendages or filaments attached to the lower jaw, as we have observed above; the largest of these is the exocetus appendiculatus (Wood, in Journ. Acad. Nat. Sciences), a very rare species, few specimens of which exist in collections.

FO, FOE, FOHI, is revered in China as the founder of a religion, which was introduced into China in the first century of the Christian era. The circumstances are related as follows:—The emperor Ming-ti XV., of the Hang dynasty, bethought himself of the works of Confucius. "In the West shall be found the holy one,"—and sent two grandees of the empire, Tsy and Tsing-King, in that direction, with orders not to return till they had found the holy one, and learned his precepts. They returned with the religion of Fo, which they had found in India. The first to adopt the religion was Tu Fo, who was born in Cashmere about the year 1027 B.C. His father, In-fan-wang, was king of that country; his mother's name was Moye. He was born from her right side. While she was in travail, the stars were darkened, and nine dragons descended from heaven. Immediately after the birth, she died. In the beginning of her pregnancy, she dreamed that she had swallowed a white elephant, which is the cause of the veneration paid these animals in India. According to other accounts, the mother of Fo is said to have been impregnated by a ray of light. At the moment of his entrance into the world, he stood upright on his feet, stepped forward seven steps, and, pointing one hand to heaven, and the other to the earth, spake distinctly these words:—"None in heaven or on earth deserves adoration beside me." At that time, he was called Xekias (She-Kia) or Shaka. In his seventeenth year, he married three wives, and, at the twenty-first year, he left his family, and went with four wise men into the wilderness. At the age of thirty, he was suddenly filled with the holy spirit, and became a Fo, or divine being. He confirmed his doctrines by miracles, collected an immense number of disciples around him, and spread his doctrines throughout the East. His priests and disciples were called in China, Seng; in Tartary, Lanbas; in Siam, Talaspons; and in Europe, Bonzes. In the seventeenth year of his age, the great Fo, perceiving that his end was approaching, declared to his disciples "that hitherto he had spoken only in enigmatical and figurative terms. From now on, I shall teach them to take leave of them, he would unveil to them the mysteries of his doctrine." "Know then," said he, "that there is no other principle of all things, but the void and nothing; that from nothing all things have sprung, and to nothing all must return, and that all our hopes must end." This final declaration of Fo divided his disciples into three sects. Some founded on it an atheistical sect; the greater part adhered to his earlier doctrines; while others made a distinction between exoteric and an esoteric doctrine, which they endeavoured to bring into harmony. The exoteric doctrine is the system of morality. It distinguishes between good and evil; he who has done good during this life will be rewarded after death; and he who has done evil will
FOCUS.—FOG.

be punished. There are distinct places for these two sorts of souls, and to each a station is assigned according to their rank. The former is born to save mankind, and bring back those who had strayed from the path of righteousness; he suffered for their sins, and obtained for them a blissful resurrection in the other world. He gave his followers only these five commandments—not to kill any living creature; not to take the property of another; to avoid impurity and unchastity; not to speak falsely; and to refrain from wine. The priests of Fo inculcate, particularly, the practice of certain works of charity, and especially of liberality towards themselves. They recommend the building of convents and temples, in all which they dwell, and at the time the punishment which they deserve, by their prayers and pious exercises. They teach that whoever disobeys their commandments will suffer the most dreadful torments after death, and that his soul will enter the bodies of the vilest and most unclean animals. Their principal secret doctrines, into which but few are initiated, are the following: The origin and end of all things is the void and nothing. The human beings sprang from nothing, and have returned to nothing. The void constitutes our being. All that exists sprung from nothing, and the man of wisdom endeavours to return to the void when he came. All things living and inanimate together constitute one whole; differing from each other, not in essence, but only in form and qualities. The original essence of all things is pure, unchangeable, highly subtle and simple, and, because it is simple, the perfection of all other beings. It is perfect, and therefore exists in an uninterrupted void, without possessing virtue, power, or intelligence; nay, its very essence consists in the absence of intelligence, activity, and want or desire. Whoever desires to be happy, must constantly endeavour to conquer himself, and become like the original essence. To accomplish this, he must accustom himself not to act, desire, feel, nor think. According to Kinroth, his precept was, "Endevour to annihilate thyself, for, as soon as thou ceasest to be thyself, thou becomest one with God, and returnest into his being." The public worship of Fo, which became a national religion, is called, in India, Bramanism. Under various forms, it is spread through Hindostan, Thibet, and Tartary. The other followers of Fo adopt the doctrine of the void and nothing. All, however, believe in the transmigration of souls, and that, when a being, in the body of a human, animal, or vegetable body, inhabits the body of a Brahim. After his death, it passes into the bodies of other men, or of beasts, according to the preponderance of his good or bad actions, till it enters the class of Samanaean, and family appears in the body of a perfect Samanaean, who has no more crimes to expiate; they are all wiped off by former migrations; he need no longer revere the gods, who are only the servants of the Supreme God of the universe. Free from passions, and incapable of committing any impurities, he is in itself a deity. The Deity, from whom his soul had emanated. This Supreme Being, the essence of all things, is eternal, invisible, incomprehensible, almighty, just, beneficent, and originated from itself. It cannot be represented by any image, neither can it be worshipped, because it is elevated above all images. The worship of images is condemned, and adored, and worshipped. This is the source of the worship of images by the nations of India, and of the multitude of particular tutelary deities in China. All the elements, the changes of the weather, the phenomena of the atmosphere, every moral and profession, is the parent of gods. These gods are fire, water, soldiers, etc., are only the principal officers of the Supreme God Seng-Wang-Mau, who looks down from his seat in the highest region of the heavens, put out, and quiet, upon the doings of mankind. Every Chinese makes an image of his guardian genius in wood or stone, and pays to it his religious homage three times a day. The Samanaean, lost in continual contemplation and meditation on the Supreme God, makes it his chief concern to destroy himself, in order to return, and be absorbed in the bosom of that Being which created all things out of nothing, and is himself a pure spirit. When this pure Spirit created matter, he assumed a material form, and separated the male and female organs, which were united in him. The creation of the universe was effected by their union. Thibet (see Indian Mythology) is the symbol of this first act of the Deity, by which Brahma, Vishnu, and Iswara were produced. These beings are not gods, but qualities or attributes of the Supreme Deity.

FOCUS, in optics, is a point wherein several rays concur or are collected, after having undergone either refraction or reflection. This point is thus designated, because the rays being here brought together and united, their joint effect is sufficient to burn bodies exposed to their action; and hence this point is called the focus, or burning point. It must be observed, however, that the focus, strictly speaking, a point; for the rays are not accurately collected into one and the same place or point, owing to the different nature and refrangibility of the rays of light, to the imperfections in the figure of the lens, and other similar impediments. The focus, therefore, is a small circle, which Huygens has demonstrated to be one-eighth the thickness of the lens, when it is convex on both sides; that is, it cannot be less than this, but, in imperfect glasses, it exceeds the above measure sometimes considerably.

FODDER, or FOTHER, in mining; a measure containing 2900 lbs. weight, as of lead; but in London it is 2000.

FOE, DANIEL. See Defoe.

FETUS, in anatomy; a term applied to the offspring of the human subject, or of animals, during its residence in the womb. See Embryo.

FOG. There is a constant ascent of watery particles from the surface of the earth, occasioned by the evaporation from masses of water and moist bodies. Part of the water which rises in vapour is intimately united with the atmospheric air, which holds it in solution. This portion of aqueous matter is invisible, and is not capable of being distinguished from the serene weather. Thus, in the hot days of summer, any cold body (as a vessel filled with iced water) is immediately covered with little globules of water, which are the vapour of the atmosphere precipitated. But when the air is saturated, the watery particles which continue to rise are no longer dissolved, but remain suspended in vesicular vapours, which form clouds (q. v.) when they rise to a great height, and fogs when they hover near the surface of the earth. Fogs are more frequent in those seasons of the year when there is a considerable difference of temperature in the different parts of the day; as, for instance, in autumn, when, in the warmest part of the day, the air is capable of holding a great quantity of aqueous matter in solution, which, on cooling, towards evening, it is no longer capable of dissolving. In places where it is not so easy to be saturated, and in cold weather, the process of evaporation is very slow, so that, in these cases, fogs are less common. In low, moist places, and in confined places, as valleys, forests, bays, or lakes, surrounded by high lands, they are much more prevalent than in open countries, or elevated spots, where the air is quickly dispelled by the winds. The aquatic and atmospheric phenomena,
which has been called dry fog. In 1783, all Europe was enveloped with a dry fog, at the moment of a simultaneous volcanic action in Iceland and Calabria. In 1755, before the earthquake which destroyed Lisbon, fog preceded the Tyrol and Switzerland. It appeared to be composed of earthly particles reduced to an extreme degree of fineness.

FOG-BANK; an appearance in hazy weather, which frequently resembles land at a distance, but which vanishes as you approach it.

Foil, a leaf of metal, placed under transparent substances, such as precious stones, for the sake of improving their colour, and heightening their lustre, the light, which passes through the transparent body, being reflected by the metal. Figuratively, anything that serves to set off another object, by improving its external appearance.

Foil is also used to signify the sheet of amalgam laid on the side of a mirror, which enables it to reflect a complete image.

Foil, in fencing; a blunt sword, or one tipped with a button or cork, covered with leather.

FOIX, GASTON DE. See Gaston.

FOIY, the Corses, live, a tactician, born at Avignon in 1669, entered the military service at the age of sixteen years, and served with the rank of under-lieutenant in a partisan corps of the regiment Berry, 1688. This service was a good school of war. In the campaign of 1701, he found new opportunities of displaying his military science. Foilard served in many campaigns. In the battle at Cassano, in 1706, he continued to perform his duty, after having received three wounds. His reputation rests principally on his system of columns. In 1714, he went to Malta, which was threatened by the Turks, and there gave new proofs of his talents. The reputation of Charles XII, carried him to Sweden; but on the death of this king, he returned to France. His last campaign was in the year 1719, as mestre de camp, under the duke of Berwick. His views are explained at large in his commentaries on Polybius. His other principal works are, Nouvelles découvertes sur la Guerre, Traité de la Défense des Places, and a Traité de la Guerre de Partisans. Foilard died at Avignon in 1758.

FOLIGNO (anciently Folgijum); a town of the States of the Church, in the delegation of Perugia, situated in a fertile plain, on the river Topino, at the foot of the Apennines. Population, 15,000. The front line of its walls is four miles long. Folkigno is celebrated for its confectionery. The famous picture of Raphael, La Madonna di Foligno (with an angel and a votive table in the centre), took its name from this place. The picture is at present in the Vatican, and is one of those which the French carried to Paris.

FOLZ, Hans (John); from Worms; a barber at Nuremberg, one of the chief seats of the master-singers (meister-sanger); by no means to be confounded with minne-sanger, of whom he was a member in the second half of the fifteenth century. He was one of the first who introduced dramatic literature into Germany, by making the diversions of the carnival a better form. There are still existing four of his compositions for such occasions, Solomon und Marcel, Ein Bauerngericht, Eine gar baurische Bauernkrieth, Der Arzt und der Kranke. Folz took an active part in the reformation, and in the introduction of the most invented art of printing.

FOND findet, is the external application of a fluid, as warm as the patient can bear it. Two flannel cloths are dipped in that liquor, one of which is wrung as dry as possible, and immediately applied to the part affected. This cloth lies on till the heat has evaporated, and the other is then applied. By this alternate application, the part affected is constantly supplied with warmth, for fifteen minutes, or half an hour, as occasion may require.

FONDI, or FONDIL, a town of Naples, in Lavora, situated in the plain of which it forms the eastern extremity, the town is an old castle, of no great strength, now almost deserted. In 1483, it was made a town, and incorporated into an solitude. Most of these hills are covered with olive-trees, and the whole plain is interspersed with orange, lemon, and other fruit trees, whose verdure forms a perpetual spring. The lake of Fondi (anciently Lacus Fundanus, or Angulanus) lies between the road and the sea, and is a fine expanse of water.

FONSECA, Eleonora, marchioness of; born at Naples, of one of the most illustrious families in that city, in 1768. Though possessed of extraordinary beauty, she devoted her youth rather to the cultivation of her mind than to the improvement of her personal charms. Her education was given at the convents of natural history and anatomy. In 1784, she married the marquis de Fonseca, of an ancient Spanish family, long settled at Naples. Being presented at court, she became an attendant on the queen; but, having given offence to her majesty and the minister Acton, she was dismissed, and forbidden to appear again in the precincts of royalty. She now engaged anew in her studies, and assisted in his scientific researches her friend the abbé Spallanzani. On the breaking out of the French revolution, the marchioness Fonseca became one of its warmest partisans: and, when the French invaded Italy, she engaged in intrigues against the Neapolitan court. In 1790, the king and royal family being obliged to quit Naples, the Lazzaroni threatened the lives of those who were suspected to be in the French interest. The marchioness de Fonseca narrowly escaped their fury, and owed her safety to her own firmness, as she traversed the city to take refuge in the castle of St Elmo. When the triumph of her party had taken place, she commenced a journal, entitled the Neapolitan Monitor, in which she attacked the royal family, and especially the queen and the ministers. This journal produced a great effect in forwarding the views of the antiroyalists; and Madame de Fonseca was in the zenith of her popularity. When she announced that she had obliged the French to quit Naples, she was advised to seek for safety in flight; but she refused, and became the victim of her imprudence. The cardinal caused her to be arrested, and she was hanged on the 20th of July, 1790.

FONTAINE, Jean de La, one of the most original men of genius of the age of Louis XIV., was born at Chateau-Thierry, in 1621. His father was overseer of the waters and forests; and it is supposed that he received his early education at Rheims. At the age of nineteen, he placed himself under the fathers of the oratory, with whom he remained, however, only eighteen months, in which time he composed his first poem until his twenty-second year, when he was much impressed by the recital of an ode of Malherbe's. His first essays in verse were confided to a relative, who directed him in his choice of reading; such being his simplicity and docility, that he was in character a child, when in appearance he was a man. At the persuasion of his family, he married, and appears to have esteemed his wife; but his disposition was incompatible with strong attachment, so that he made little difficulty of quitting her when invited to the capital by the duchess of Bouillon, who first put him upon writing his Tales. At Paris, he was protected
by the superintendent, Fouquet, who allowed him a pension, for which he gave quarterly receipts in verse. On the fall of Fouquet, he entered into the service of Henrietta of England, wife of Monsieur, and at her death found protection from other persons of distinction until for him the title of "le bon homme." The literary society of Paris fixed him in the capital, although he paid a yearly visit to his wife; on which occasions, he seldom failed to get rid of a part of his estate, which, in consequence, fell into great disorder, especially as his wife was as careless in pecuniary matters as himself. He had but one son, whom, at the age of 14, he placed in the hands of Harlay, archbishop of Paris, who promised to provide for him. After a long absence, La Fontaine met this youth at the house of a friend, and, being pleased with his conversation, was told that it was his own son. "Ah, Monsieur," he said, "I am glad of it." La Fontaine, probably on account of this very simplicity, was no favourite with Louis XIV., and was the only writer of merit of the time who did not share in the royal bounty. The king even hesitated some time to confirm his nomination to the French academy. After the death of Madame Sablébo, in whose house he lived twenty years, he was invited by Madame Mazarin and St Evremont to take up his abode in England; but the difficulty of the language, and his attachment to the circles of Paris, prevented him from going there. In 1692, he was seized with a dangerous illness, and, on being waited upon by a priest, who addressed him on the subject of religion (on which he had been as careless as on other matters), he observed, "I have lately taken to read the New Testament, which, I assure you, is a very good book; but there is one article to which I cannot come: it is that of eternity of punishment. I cannot comprehend how this eternity is compatible with the goodness of God"—an expression similar to that of an eminent German theologian, who said, that he could not see how a virtuous soul could be happy in heaven, while conscious that there was even one soul condemned to suffering in hell. The priest found La Fontaine but one whose circle was incapable of induc- ing him to throw a completed theatrical piece into the fire, but to renounce all the profit of a new edition of his Tales, then printing in Holland. La Fontaine survived this illness, and passed two years in the house of madame d'Hervart. During this time, he undertook to translate some pious lyrics, but did not succeed in this new species of composition. He died at Paris, in 1695, at the age of seventy-four; and, when he was undressed for interment, a haircloth was found next his skin.

The rank occupied by La Fontaine among the poets of his country is due to him chiefly as a writer of tales and fables, and, as such, he is inimitable. His verses, although negligent, have all the freshness and nature which no study can bestow, and abound with grace and delicacy. His narrative has that easy fluency which arises from the perfect adaptation of his ideas to his style. Despite the deficiencies which form perfect speciments of that lurking archness, under the guise of simplicity, which is so lively and amusing. His capacity of making severe and shrewd observations on human life was, indeed, similar to that of children, who so often, in their simplicity, make very wise, until their best wishes and their wishes, like those of Fontaine, was simple almost to stupidity. According to D'Al- embert, "If not the greatest, he is the most singularly original of all the writers of the age of Louis XIV., the most an object of despair to imitators, and the writer whom it would cost nature much pains to re-produce." It must be remarked as a striking proof of La Fontaine's originality, that the works of literature in which he took! into her house, and freed him from the domestic cares to which he was so ill suited. He was in habits of intimacy with Molière, Boileau, Racine, and all the first wits of Paris, by whom he was much beloved for the candour and simplicity of his character, which acquired for him the title of "le bon homme." The literary society of Paris fixed him in the capital, although he paid a yearly visit to his wife; on which occasions, he seldom failed to get rid of a part of his estate, which, in consequence, fell into great disorder, especially as his wife was as careless in pecuniary matters as himself. He had but one son, whom, at the age of 14, he placed in the hands of Harlay, archbishop of Paris, who promised to provide for him. After a long absence, La Fontaine met this youth at the house of a friend, and, being pleased with his conversation, was told that it was his own son. "Ah, Monsieur," he said, "I am glad of it." La Fontaine, probably on account of this very simplicity, was no favourite with Louis XIV., and was the only writer of merit of the time who did not share in the royal bounty. The king even hesitated some time to confirm his nomination to the French academy. After the death of Madame Sablébo, in whose house he lived twenty years, he was invited by Madame Mazarin and St Evremont to take up his abode in England; but the difficulty of the language, and his attachment to the circles of Paris, prevented him from going there. In 1692, he was seized with a dangerous illness, and, on being waited upon by a priest, who addressed him on the subject of religion (on which he had been as careless as on other matters), he observed, "I have lately taken to read the New Testament, which, I assure you, is a very good book; but there is one article to which I cannot come: it is that of eternity of punishment. I cannot comprehend how this eternity is compatible with the goodness of God"—an expression similar to that of an eminent German theologian, who said, that he could not see how a virtuous soul could be happy in heaven, while conscious that there was even one soul condemned to suffering in hell. The priest found La Fontaine but one whose circle was incapable of induc- ing him to throw a completed theatrical piece into the fire, but to renounce all the profit of a new edition of his Tales, then printing in Holland. La Fontaine survived this illness, and passed two years in the house of madame d'Hervart. During this time, he undertook to translate some pious lyrics, but did not succeed in this new species of composition. He died at Paris, in 1695, at the age of seventy-four; and, when he was undressed for interment, a haircloth was found next his skin.

The rank occupied by La Fontaine among the poets of his country is due to him chiefly as a writer of tales and fables, and, as such, he is inimitable. His verses, although negligent, have all the freshness and nature which no study can bestow, and abound with grace and delicacy. His narrative has that easy fluency which arises from the perfect adaptation of his ideas to his style. Despite the deficiencies which form perfect speciments of that lurking archness, under the guise of simplicity, which is so lively and amusing. His capacity of making severe and shrewd observations on human life was, indeed, similar to that of children, who so often, in their simplicity, make very wise, until their best wishes and their wishes, like those of Fontaine, was simple almost to stupidity. According to D'Al- embert, "If not the greatest, he is the most singularly
then nearly buried under the rubbish, to the middle of the square. This undertaking had been already contemplated by several popes, but had been relinquished on account of the difficulty of accomplishing it. Fontana happily executed this gigantic operation in the year 1586. He afterwards had three other obelisks, which were found, partly buried under ruins, in different squares. Among other buildings erected by Fontana, by the command of Sixtus V., and which are an honour to the patron not less than to the architect, the library of the Vatican, and the aqueduct (acqua felice) deserve particular mention. Under Clement VIII. Fontana constructed several national buildings, and repaired ancient monuments. Having been accused of converting to his private use the money received for public purposes, he was deprived of his office by the pope, but immediately received the offer of the post of architect and chief engineer of the king of the Two Sicilies, and, in 1590, went to Naples. He there constructed several canals, to prevent inundations, a new road along the bay, and the royal palace in the capital, which, however, has been since considerably changed. His plan for a harbour at Naples was executed after his death by another architect. Fontana died at Naples in 1607, and was succeeded in the office of royal architect by his son Julius Cesar. We have but one literary work by Domenico Fontana (Rome, 1590, with nineteen engravings). It is an explanation of his method of removing the great obelisk. The process must be considered as his own invention, since the writings of former architects contain no rules on this subject.

FONTANA, Felice, natural philosopher, at the grand ducal court of Florence, was born at Pomarolo, not far from Roveredo, in the Italian Tyrol, in 1730; begun his studies in the schools at Roveredo and Verona, and, after having completed them at the universities of Padua and Bologna, went to Rome, and thence to Florence. The grand duke Francis (afterwards emperor) appointed him professor of natural philosophy in the university of Pisa. The grand duke Leopold (afterwards emperor Leopold II.) invited him to Florence, but permitted him to retain his office at Pisa, and employed him in forming the cabinet of the natural sciences, which is yet one of the features of Florence. This collection contains an immense number of anatomical preparations, in coloured wax, which exhibit all parts of the human body in the minutest detail, and in all imaginable positions. They are executed with the greatest skill, and were made by different artists under the direction of Fontana. The emperor Joseph II. procured from him a similar collection for the surgical academy in Vienna. In the same way, many plants, and other natural objects, which lose their natural colours by keeping, were represented in coloured wax, from nature, under his direction. Fontana is the author of several works on scientific subjects, some of which have been translated into French and English.

His two other works which have been translated into French are: 1. A treatise on the creation of the world; 2. A treatise on the churches of Italy.

FONTANÉS, LOUIS, MARQUIS DE; a distinguished member of the French institute, was born of a noble family, at Nîort, in 1757. In the commencement of the French revolution, he edited a journal, entitled the Journal des缝is, and published a reply to Robespierre, joined La Harpe and others in the publication of a paper, called Le Mémorial, which was, together with about forty more of the same description, suppressed by the national convention, on the 6th September, 1797, the several proprietors, editors, &c., being all included in one common sentence of banishment and confiscation of property. M. de Fontanes escaped to England, where he contracted an intimacy with M. de Chateaubriand, in company with whom he returned to France. He was directed to the committee, which was constituted for writing the history of France, and was finally selected as one of the committee for the history of the Jacobins. In 1800, he was appointed chief of the new department of the Seine, and was a member of the department of Paris, and, in 1810, attained to the dignity of a senator. In this capacity, he, on the 1st of April, 1814, made a strong speech in favour of the restoration of the Bourbon dynasty; and, being subsequently placed on the committee for drawing up the constitutional charter, was, for his services, raised to the peerage, on the re-establishment of that body. In 1817, he was one of the supporters of the election law introduced by Dease, but afterwards changed his opinion, and voted for its repeal. M. de Fontanes died at Paris, March 17, 1851.

FONTENAY; a village in Burgundy, department of the Yonne, of which the ancient name was Fontinum, between the sons of Louis le Débonnaire, in 841, the consequence of which was the division (843) of the Frankish empire, founded by Charlemagne. Lothaire I. received Italy, and what was afterwards called Lorraine, with the title of emperor; Louis received Germany, and Charles the Bald, France. There are many places of this name in France, distinguished from each other by some particular epithet.

FONTENELLE, BERNARD LE BOYER DE; born at Rouen, 1657; son of an advocate and of a sister of the great Corneille. Although he lived to the age of nearly 100 years, and retained, till his death (1757), a remarkable degree of activity, preserving a sound mind in a sound body, he came into the world so weak, that it was not thought possible that he could survive. He began his youthful studies in the college of the Jesuits, at Rouen, and, at the age of thirteen, entered the class of rhetoric. After completing his course of learning, he appeared an advocate, conducted a cause, which he lost, and renounced the bar for ever. In 1674, he went to Paris, and soon became known by his poetical effusions and learned works. Several of his poems appeared in the Mercure galant, and displayed much poetic sensibility and taste. Before the age of twenty, he had assisted in the composition of the operas of Psyche and Belcheron, which appeared under the name of his uncle, Thomas Corneille. In 1681, he brought out his tragedy Aspar, which was unsuccessful. Its failure excited so much attention, that Racine wrote an epigram on it. Zeal for the fame of his uncle, and a personal ambition, brought him into a party entirely opposed to the opinions of those who then directed the destinies of French literature. But his amiable character and his love of peace prevented him from entering into the contest with acrimony. In the dispute concerning the comparative merit of the ancients and moderns, he favored the latter, as being of antiquity. He became acquainted, in his youth, with the philosophy of Descartes, and remained attached to it, without being willing to defend it. As a poet, he had no fire, nor creative power; as a scholar, he was not distinguished for originality of views. He treated elegant literature in a dry and pedantic manner, and limited himself to the one-way light. In 1683 appeared his Dialogues of the Dead, which were favourably received, although his continual straining after wit and novelty deprives them of the
charm of natural ease. His *Entretiens sur la Pluralité des Mondes* (1686) was the first book in which astronomical subjects were discussed with taste and wit. It has now become the account of the advancement of science. Fontenelle distinguished himself as secretary of the academy of sciences, by his *Eloges*, a class of writings which have become so common since his time. No learned man exerted a more decided influence on his age than Fontenelle. He described in it, not less on account of his wisdom and purity of life, than of the elegance and grace of his writings. Riveros describes his character in the following manner: "When Fontenelle appeared on the field, all the prizes were already distributed, all the palms already gathered; the prize of universality alone remained. Fontenelle determined to attempt it, and he was successful. He is not only a metaphysician with Malebranche, a natural philosopher and mathematician with Newton, a legislator with Peter the Great, a statesman with d'Argenson; he is everything with every body."

**FONTENOEY**; a village in the Netherlands, province of Utrecht; it was celebrated for the feast of May 11, 1745, in which the French, under Marshal Saxe, defeated the British, Austrian, and Dutch allied forces. It contains 500 inhabitants.

**FONTEVRAULT, or FONTEVAUD**, a valley on the borders of Poitou and Anjou, in the department of Mayenne and Loire, was chosen, in 1009, by Robert d'Arbrissel, celebrated for his extraordinary penances, as the place for his religious society, composed of penitent females. (See the article *Fontevrault*, in *Bayle's Dictionary.*) The society received the name of the order of Fontevraulx from this circumstance. Robert gave his followers of both sexes the rule of St Benedict, and a very singular constitution, which made the nuns their superiors; the monks were subject to them. The abbess of Fontevrault was the superior of the whole order, which soon extended into Spain. She was generally a lady of rank, and was subject to the pope only. Disorders soon crept into the order, which began, in consequence, to decline; yet it had fifty-seven monasteries in France before the revolution, when it was suppressed.

**FONTINALIA**; a Roman festival, celebrated in honour of the nymphs of the fountains, during which the streets were watered with flowers. Flowers were also thrown into them.

**FOOD.** From the structure both of his teeth and his stomach, man seems adapted to live equally on animal and vegetable food. Some nations subsist entirely on milk and animal food, such are the Arabs of the desert, while others exist chiefly on pulse and rice. The Hindoos, however, are a much feebler race of men, and seldom attain an advanced period of life, whilst the Arabs not unfrequently exceed a century. See *Dietetics.*

An interesting report on the comparative nutritive properties of foods was lately presented to the French minister of the interior, by Messrs. Berry and Vauquelin, members of the institute. The result of their experiments is as follows: In bread, every 100 lbs. is found to contain eighty lbs. of nutritious matter; butcher meat, averaging the different sorts, contains only thirty-five lbs. in 100; French beans (of the emu variety) ninety-two lbs. in 100; broad beans, eighty-nine lbs.; peas, ninety-three lbs.; lentils (a species of half pea, little known in Britain), ninety-four lbs. in 100; greens and turnips, which are the most aequous of all vegetables used in culinary purposes, furnish only eight lbs. of solid nutritious substance (supposing 40 lbs. of sugar is produced), fourteen lbs.; and what is remarkable, as being opposed to the old theory, 100 lbs. of potatoes only yield twenty-five lbs. of nourishment; one lb. of good bread is equal to two and a-half lbs. of potatoes; and seventy-five lbs. of bread and thirty lbs. of meat are equal to 300 of potatoes; a half lb. of bread and five oz. of meat are equal to three lbs. of potatoes; one lb. of potatoes is equal to four lbs. of cabbage, and three lbs. of turnips; and one pound of rice bread or French beans is equal to three lbs. of potatoes.

**FOOL, Foolish.**

**FOOLAIHS. See Foutalas.**

**FOOLS, Feast of.** Festivals, under this name, were regularly celebrated, from the fifth to the sixteenth century, in several countries of Europe, by the clergy and laity, with the most absurd ceremonies, and form one of the strangest phenomena in the history of mankind. Among the heathen festivals, which the Christians could not easily abolish, were the *Saturinalia*, which, in the confusion of all distinctions of ranks, and in extravagance of merriment, exceeded the gayest carnivals. The feast of fools, among Christians, was an imitation of the *Saturinalia*, and, like this, was celebrated in December. The chief celebration fell upon the day of the Innocents, or upon new year's day; but the feast continued from Christmas to the last Sunday of Epiphany. At first, only the boys of the choir, and young sacristans played the principal part in them; but afterwards all the inferior servants of the church, and even laymen, engaged in them, whilst the bishop, or the highest clergyman of the place, with the canons, formed the audience. The young people, who played the chief parts, chose from among their own number, a bishop or archbishop of fools, or of unreason, as he was called, and consecrated him, with many ridiculous ceremonies, in the chief church of the place. This officer then took the usual seat of the bishop, and caused high mass to be said, unless he preferred to read it himself, and to give his blessing to the people, which was done with the most ridiculous ceremonies. During this time, the rest of the performers, dressed in different kind of masks and disguises, engaged in indecent songs and dances, and practised all possible follies in the church.*

The order of ceremonies, according to which the feasts of fools were celebrated in some places, are still extant. According to the ritual of the feast of fools, in the church of St. Genevieve, the masks were exhibited upon the altar, whilst the bishop of fools read mass; and they threw stinking incense into the holy center. The origin of these extravagances is, probably, to be looked for in France. In Germany, they are only known to have been celebrated in the cities on the Rhine; but we must not conclude from this that they were not found in other parts of the country. They were condemned by popes and bishops, by French and Spanish councils. The Sorbonne forbade them in 1444. These prohibitions, however, do not date earlier than the dawning of the new light which shone bright in the sixteenth century. But, even at the period of the prohibitions, defenders of these festivals were not wanting, one of whom declared them to be as sacred and as pleasing to God as the

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*Indecent songs were very frequently sung among the monks in the middle ages. Many writers, Catholics and Protestants, and among them Luther, complained bitterly of this abuse. The *fools* were often turned into merry *songs*, sung by the canons, monks, &c., after dinner or supper. Several Latin songs, still in existence among the German students, originated from the convivialities which they are now much changed. The favourite *Gaudeamus igitur* of the German students was originally a psalm. Some other of their songs in Roberts' *Gleanings* are taken from the gayety of convents and ecclesiastical students in the middle ages; for instance, the *drinking-mass*, so called, still sung with great glee by the students.*
feast of the immaculate conception of the mother of God. To account for these celebrations, so opposed to all our ideas of religion, decency, and common sense, we must transfer ourselves to times when men, less serious and less engaged in useful occupation and study than at present, combined with childish simplicity, the most ridiculous with the noblest subjects, and often with less injury than we should suppose to the latter. When we gaze on the slender and elegant columns of a Gothic church, we often find, in the tracery of the capitals, a squirrel, a monkey, or even a miniature man in a ridiculous attitude, as if the builder thought the stroke of humour is often interspersed in the dramas of Shakespear, in the midst of the most tragic scenes. Burlesque or insolent figures were even not unfrequently drawn in the work of the large initial letters of the prayers in the brevities of this period, with a license which would be most startling to an observer whose ideas were formed entirely on the usage of later periods.

FOOT; a measure of length, derived from the length of the human foot, containing twelve linear inches.—Square foot is a square whose side is one foot, and is therefore equal to 144 square inches.—Cubic foot is a cube whose side is one foot, and the cubic inch is one cubic inch.—Square Measure.

FOOT, in the Latin and Greek poetry; a metre or measure, composed of a certain number of long and short syllables. These feet are commonly reckoned twenty-eight, of which some are simple, as consisting of two or three syllables, and therefore called disyllabic or trisyllabic feet; others are compound, consisting of four syllables, and are therefore called tetrasyllabic feet.

FOOTA JALLOO; a country in the west part of Africa, situated chiefly between the sources of the Gambia and the Rio Grande, about 350 miles from E. to W. and 200 from N. to S. The climate is good; the soil, dry and stony; about one-third of it very fertile, producing rice and maize. The inhabitants are Mohammedans, considerably civilized, and have numerous mosques. Chief towns, Teempo and Laby.

FOOTA TORRA; a country in Africa, between the Niger and Gambia, N. of Woolly, N. W. of Bondou. It is extensive, and occupied by Foulahs, but is little known.

FOOTE, Samuel, a comic writer and actor, was born about 1721, at Truro, in Cornwall. He was educated at Worcester college, Oxford, and entered the temple; but, after a course of dissipation, to which his small fortune fell a sacrifice, he turned his attention to the stage. He appeared first in Othello, but had little success as a tragedian, and soon struck out an untried path for himself in his double character of author and performer. In 1747, he opened the little theatre in Haymarket, with a dramatic piece, which he entitled the Diversion of the Morning. It consisted of some very humorous imitations of well known characters, in detached scenes, written by Foote, who always took the leading parts himself. It succeeded so well, that, in order to avoid the act for limiting the number of theatres, he repeated it under the title of Mr Foote's giving Tea to the public; and, from the 1751 to the 1757, his play was acted at one of the winter theatres every season, generally for a stated number of nights, and usually to bring out some pieces of his own composition. His embarrassments compelled him, in 1760, to bring out his Minor, at the Haymarket, with such a company as he could hastily get together. Henceforward he pursued the scheme of constantly occupying the Haymarket theatre when the others were shut up, and, from 1762 to the season before his death, he regularly performed there. In 1765, he brought out his of the Patron and the Committee, abounding in general and personal ridicule. In 1766, he was thrown from his horse, and fractured his leg in such a manner, that amputation was necessary. He soon, however, recovered his health and spirits, and even improved the incident to the suggestion of parliaments for his own acting. This accident also proved of service to his fortune, as it induced the duke of York to procure him a patent for life of the Haymarket theatre. In 1775, the duchess of Kingston having made herself the topic of public conversation, Foote thought that she would afford a happy subject for the stage, and wrote a part for her, under the character of Lady Kitty Crocodile, in a new piece which he was composing, called the Trip to Calais. Taking care that his intention should reach her ears, a negotiation was set on foot to prevent its execution for a pecuniary consideration. So much, however, was demanded, that the duchess was obliged to exert her influence. Foote was then obliged to expunge the character from his drama. He was soon after assailed by a charge of an infamous nature, brought by a discarded man-servant, according to some accounts, instigated by female revenge. He was, however, acquitted, in full accordance with the sentiments of the judge; but he so felt the disgrace that his health declined, and, a few months afterwards, he was seized on the stage, with a paralytic fit, which obliged him to retire and spend the summer at Brighton. He was taken suddenly ill at Dover, and died there in October, 1777. The character of Foote may be gathered from the foregoing sketch. Of delicacy or feeling he was wholly destitute; as a humorist, he was irresistible, which made him a constantly welcome guest at the tables of the gay and great; as a dramatic writer, he possessed the vis comicis in a supertative degree, and there is a force of nature in some of his comic delineations, which will last so long as the theatre shall exist. With the exception of the Mayor of Garrat, none of his pieces, twenty in number, at present keep the stage. His works have been published in 4 vols., 12mo.

FORAGE, in military affairs, denotes the provisions brought into the camp by the troops for the sustenance of the horses.

FORCE, in mechanics, denotes that unknown cause which produces a change in the state of a body, as to motion, rest, pressure, &c.; that is, whatever produces or tends to produce motion, or a change of motion in any body, is called force. According to this definition, the muscular power of animals, as likewise pressure, impact, gravity, &c., are considered as forces, or sources of motion, it being evident, from daily experience, that bodies exposed to the free action of any of these are either put into motion, or have their state of motion changed. All forces, however various, are measured by the effects which they produce in like circumstances; whether the effect be creating, accelerating, retarding, or deflecting motions; the result of some general and commonly observed force is taken for unity, and with this any others may be compared, and their proportions represented by numbers or lines. To this point of view they are considered by the mathematician; all else falls within the province of the universal philosopher, or the metaphysician. When we say that a force is represented by a right line, A B, it is to be understood that it would cause a material
point, situated at rest in A, to run over the line A B, which is called the direction of the force, so as to arrive at B at the end of a given time, while another force would cause the same point to have moved a greater or less distance from A in the same time. (See figure.) Mechanical forces may be reduced to two sorts; one of a body at rest, the other of a body in motion. The former is that which we conceive as residing in a body when it is supported by a plane, suspended by a rope, or balanced by the action of a spring, &c., being denominated pressure, tension, force, or vis mortua, solicitudo, contitus novendi, and which may always be estimated or measured by a weight, viz., the weight that sustains it. To this class of forces may also be referred centripetal and centrifugal forces, though they reside in a body in motion, because these forces are homogeneous to weights, pressures, or tensions of any kind. The force of a body in motion is a power residing in that body so long as it continues its motions, by means of which, it is able to remove obstacles lying in its way, to lessen, destroy, or overcome the force of any other moving body, which meets it in an opposite direction. For uniform velocities the greatest pressure or resistance, as tension, gravity, friction, &c., for some time, but which will be lessened or destroyed by such resistance as lessens or destroys the motion of the body. This is called vis motris, moving force, or motive force, and, by some late writers, vis viva, to distinguish it from the vis mortua, spoken of before.

Composition of Forces may be thus defined: If two or more forces, differently directed, act upon the same body, at the same time, as the body in question cannot obey them all, it will move in a direction somewhere between them. This is called the composition and resolution of forces or of motion, and may be illustrated in the following manner: Suppose a body, A, to be acted upon by a force in the direction A B, while, at the same time, it is impelled by another force in the direction A C, it will then move in the direction A D; and if the lines A B, A C, be made of lengths proportionate to the forces, and the lines C D, D B, be drawn parallel to them, so as to complete a parallelogram, as A D C; then the line which the body A will describe, will be the diagonal A D; and the length of this line will represent the force with which the body will move. But if the body be impelled by equal forces, acting at right angles to each other, it will move in the diagonal of a square.Instances in nature, of motion produced by several powers acting at the same time, are innumerable. (See Gunner and Projectiles.) A ship impelled by the wind and tide is one well known; a paper kite acted upon in one direction by the wind, and in another by the string, is another instance.

Animal Force, as applied to Machinery. All machines are impelled either by the exertion of animal force or by the application of the powers of nature. The latter comprise the potent elements of water, air, and fire. The former is more common, yet so variable as hardly to admit of calculation. It depends not only on the vigour of the individual, but on the different strength of the particular muscles employed. Every animal exertion is attended by fatigue; it soon relaxes, and would speedily produce exhaustion. The most profitable mode of applying the labour of animals, is to vary their muscular action, and revive its tone by short and frequent intervals of repose. The ordinary method of computing the effects of human labour is, from the weight which it is capable of elevating to a certain height, in a given time, the product of these three numbers expressing the absolute quantity of performance. This was reckoned by Daniel Bernoulli and Desaguliers at 2,000,000 lbs. avoirdupois, which a man could raise one foot in a minute. But these figures, though thereby, and are accustomed, in their calculations, to assume that a labourer will lift ten lbs. to the height of ten feet every second, and is able to continue such exertion for ten hours each day, thus accumulating the performance of 3,600,000. But this estimate seems to be drawn on the good-will of momentary exertions, under the most favourable circumstances; and it therefore greatly exceeds the actual results, as commonly depressed by fatigue, and curtailed by the unavoidable waste of force. Coulomb has furnished the most accurate and varied observations on the measure of human labour. A man will climb a stair, from 70 to 100 feet high, at the rate of forty-five feet in a minute. Reckoning his weight at 15 lbs., the animal exertion for one minute is 6975, and would amount to 4,185,000, if continued for ten hours. But such exercise is too violent to be often repeated in the course of a day by a man to clamber up a rock 500 feet high, by a ladder-stair, in twenty minutes, and, consequently, at the rate of twenty-five feet each minute; his efforts are thus already impaired, and the performance reaches only 3875 in a minute. But, under the incumbrance of a load, the quantity of energy is still more remarkably diminished. A porter, weighing 140 lbs., was found willing to climb a stair forty feet high 206 times in a day; but he could carry up only sixty-six loads of firewood, each of them 163 lbs. weight. In the former case, his daily performance was very nearly 1,500,000; while, in the latter, it amounted only to 986,000. The quantity of permanent effect was hence but only about 700,000, or scarcely half the labour exerted in mere climbing. In the driving of plies, a load of forty-two lbs., called the ram, is drawn up three and a half feet high twenty times in a minute; but the work has been considered so fatiguing as to endure only three hours a-day. This gives about 580,000 for the daily performance. Nearly the same result is obtained, by computing the quantity of water which, by means of a double bucket, a man drew up from a well. He lifted thirty-six lbs. 120 times in a day, from a depth of 120 feet, the total effect being 518,400. A skilful labourer, working with his hands, could raise about six stones one mile high, which creates an effect equal to 728,000. When the agency of a winch is employed in turning a machine, the performance is still greater, amounting to 845,000. In all these instances, a certain weight is heaved up, but a much smaller effort is sufficient to transport a load horizontally. A man could, in the space of a day, scarcely reach an altitude of two miles by climbing a stair; though he will easily walk over thirty miles on a smooth and level road. But he would, in the same time, carry 150 lbs. only to the fourth part of that distance, or seven and a half miles. Assuming his own weight to be 140 lbs., the quantity of horizontal action would amount to 47,785,000, or twenty-eight times the vertical performance; but the share of it in conveying the load is 20,961,780, or about thirty times what was spent in its elevation. The greatest advantage is obtained by reducing the burden to 102 lbs., the length of journey being augmented in a higher ratio. These results are apparently below the average of British labour, which is not only more vigorous, but, in many cases, quite overstrained. Moderate exertion of strength, joined to regularity and perseverance, would be more conducive to manufactures and agriculture, than the destruction of human life. A porter, in London, is accustomed to carry a burden of 200 lbs. at the rate of
three miles an hour. In the same metropolis, a couple of Irish chairmen continue, at the pace of four miles an hour, under a load of 300 lbs. These exertions are greatly inferior, however, to the labour performed by porters in Turkey, the Levant, and generally by their kindred the Albanians. At Constantinople, an Albanian porter will carry 800 or 900 lbs. on his back, stooping forward, and assisting his steps by a sort of staff. At Marseilles, four porters commonly carry the immense load of nearly two tons, by means of soft pads passing over their heads, and supported on their shoulders, with the ends of poles, from which the goods are suspended. These and other instances, with the ends of poles, from which the goods are suspended. These and other instances, likewise, of the exertion of man in working a pump, in turning a winch, in ringing a bell, and in rowing a boat, are as the numbers 100, 167, 227, and 248. But those efforts appear to have been continued for no great length of time. The Greek seamen, in the Dardanelles, are esteemed more skilful and vigorous in the act of rowing, than those of any other nation. The Chinese, applying both their hands and their feet, are said to surpass all people in giving impulsion to boats by sculling. The several races of horse, which differ in length and weight, show the greatest diversity results from the constitution and habits of the individual. The European and his American descendants are, on the whole, more powerful than the other inhabitants of the globe; and man, reared in civilised society, is a robust and more vigorous animal than the savage. In the temperate climates, likewise, men are capable of much harder labour than under the influence of a burning sun. Coulomb remarks, that the French soldiers, employed on the fortifications of the Isle of Martinique, became soon exhausted, and were unable to perform half the work executed by them at home. The most violent and toilsome exertion of human labour is performed in Peru by the carriers, or cargaes, who traverse the loftiest mountains, and clamber along the sides of the most tremendous precipices, with travellers seated in chairs strapped to their backs. In this manner they convey loads of twelve, fourteen, or even eighteen stone; and possess such strength and activity of constitution, as to perform this work in eight or nine hours for several successive days. These men are a vagabond race, consisting mostly of mulattoes, with a mixture of whites, who prefer a life of hardship and vicissitude to that of a constant though moderate labour. When a man stands, he pulls a cart weighing at least 10, 000 lbs., and as if the power of traction is much enfeebled by the labour of travelling. If $v$ denote the number of miles which a person walks in an hour, the force which he exerts in dragging forward a load will be expressed nearly by $t$ (12—26). Thus, when at rest, he pulls with a force of about twenty-nine lbs.avoid pus; but if he walks at the rate of two miles an hour, his power of traction is reduced to fourteen lbs.; and if he quicken his pace to four miles an hour, he can draw only three lbs. There is, consequently, a certain velocity which procures the greatest effect, or when the product of the traction by the velocity becomes a maximum. This is the rate at which his horse proceeds at the rate of two miles an hour. The utmost exertion which a man, walking, might continue to make, in drawing up a weight by means of a pulley, would amount, therefore, in a minute, only to 2450; but if he applied his entire strength, without moving from the spot, he could produce an effect of 3675. The labour of a horse in a day is commonly reckoned equal to that of five men; but then he works only eight hours, while a man easily continues his exertions for ten hours. Horses, likewise, display much greater force in carrying than in pulling; and yet an active walker will beat them on a long journey. Their power of traction seldom exceeds 144 pounds, but they are capable of carrying more than six times so much weight. The pack-horses in the West Riding of Yorkshire are accustomed to transport loads of 420 lbs. over a hilly country. But, in many parts of England, the mill-horses will carry the enormous burden of 910 lbs. to a short distance. With regard, however, to the ordinary power of draught, the formula (12—9), where $e$ denotes the velocity in miles an hour, will perhaps be found sufficiently near the truth. This, however, is greatly exaggerated, but should be viewed as merely an arbitrary and conventional standard. Wheel carriages enable horses, on level roads, to draw, at an average; loads about fifteen times greater than the power exerted. The carriers between Glasgow and Edinburgh transport, in a single horse cart, weighing about seven cwt., the load of a ton, and travel at the rate of twenty-two miles a day. At Paris, one horse, in a small cart, conveys along the streets half a cord of wood, weighing two tons; but three horses yoked in a line, are able to drag 105 cwt. 54 lbs., or that of a heavy cart loaded with building stones. The Normandy carriers travel from fourteen to twenty-two miles a day, with two-wheeled carts, weighing each eleven cwt., and loaded with seventy-nine cwt., or nearly four tons, of goods, drawn by a team of four horses. The French draught horses, thus harnessed to light carriages, are more efficient, perhaps, than the finer breeds of England. They perform very heavy work, and a single horse cart, used at Glasgow, and far greater than those heavy animals which drag the limps and tower ing English wagons. The London dray-horses, in the mere act of ascending from the wharfs, display a powerful effort, but they afterwards make little more, in their dispositions. A horse is suspended in transporting their own ponderous mass along. Oxen, on account of their steady pull, are in many countries preferred for draught. They were formerly employed universally in the various labours of husbandry. The tenderness of their hoofs, unless shod, however, makes them unfit for pulling on paved roads, and they can work only with advantage in soft grounds. But they want all the pliancy and animation which are the favourite qualities of the horse. The patient drudgery of the ass renders him a serviceable companion of the poor. Much inferior in strength to the horse, he is maintained at far less cost, and may work several hours without intermission. He will carry about two hundred weight of coals or limestone twenty-two miles a day. But, in the warmer climates, he becomes a larger and finer animal, and trots or ambles briskly under a load of 150 pounds. The mule is still more powerful and hardy, being fitted equally for transport and draught. In the hotter countries of Asia and Africa, the ponderous strength of the elephant has been long turned to the purposes of war. He is reckoned more powerful than six horses, but his consumption of food is proportionately great. The elephant carries a load of
three or four thousand pounds; his ordinary pace is equal to that of a slow trot; he travels easily over forty or fifty miles in a day, and has been known to proceed a journey of sixty miles on end, and ten miles. His sagacity directs him to apply his strength according to the exigency of the occasion. The camel is a most useful beast of burden in the arid plains of Arabia. The stronger ones carry a load of ten or twelve hundred weight, and the weaker ones transport six or seven hundred; they walk at the rate of two miles and a half an hour, and march about thirty miles every day. The camel travels often eight or nine days, without any fresh supply of water. When a caravan encamps in the evening, he is, perhaps, turned loose, for the space of an hour, to browse on the nearest herbage, which serves him to ruminate during the rest of the night. In this manner, without making any other halt, he will perform a dreary and monotonous journey of two thousand miles. —Within the arctic circle, the rein-deer is a domesticated animal, not less valuable. He not only feeds and clothes the poor Laplander, but transports his master with great swiftness in a covered sledge, over the snowy and frozen tracts. The rein-deer subsist on the scanty vegetation of moss or lichens, and are docile, but not powerful. Two of them are required to draw a light sledge; so harnessed and loaded, they can stretch and sometimes perform a journey of an hundred and twelve miles in the course of a day. But such exertions soon wear them out. A sort of dwarf camel was the only animal of burden possessed by the ancient Persians. The lama is, indeed, peculiarly fitted for the lofty regions of the Andes. The strongest of them carry only from 150 to 200 pounds, but perform about fifteen miles a day over the roughest mountains. They generally continue this labour during five days, and are then allowed to halt two or three days before they renew their task. The paco is another similar animal, employed likewise in transporting goods in that singular country; it is very stubborn, however, and carries only from fifty to seventy pounds. Even the exertions of goats have, in some parts of Europe, been turned to useful labour. They are made to trend in a wheel which diminishes, as they get on, their burden. Though very little animal, the goat exerts much force, as he climbs at a high angle. Supposing this soaring creature, though only the fourth part of the weight of a man, to march as fast along an ascent of 40°, as he does over one of 18°—the sine of the former being double that of the latter,—it must perform half as much work.

FORCELLINI, Egidio or Giles, an Italian philologist, celebrated as a lexicographer, was born 1688, in a village not far from Feltrc, in the ancient Venetian territory. The poverty of his parents prevented him from going to school, and he was almost grown up when he began to study Latin in the seminary at Padua. His teacher in this language, who soon became his friend, was professor Facchiotato. Forcellini made rapid progress in the ancient languages, and assisted Facchiotato in his new and greatly augmented edition of Calpini's dictionary of seven languages. The two friends then resolved to publish a complete Latin dictionary. But the execution of this project was long delayed by Forcellini's being appointed professor of rhetoric and president of the seminary at Genoa, in the Trevisan. But, having been recalled to Padua, and obtaining, through the patronage of the bishop of that city, cardinal Rezzonico, sufficient leisure to prosecute his task, he finished it under the direction of Facchiotato. It was published under the title Egidii Forcellini etius Latinitatis Lexicon, &c. (Padua, 1711, 4 vols. folio)—a monument of erudition and accurate knowledge of the Latin tongue. Forcellini died in 1708.

See Facchiotato.

FORCEPS, in surgery, &c.; a pair of scissors for cutting off, or dividing, the fleshy, membranous parts of the body, as occasion requires.

FORCIBLE ENTRY and DETAINER, in law, is the violently taking and keeping possession of lands or tenements, or goods, in the name of, or under the authority of, the possessor thereof, without the consent or assent of the owners or lessors, or without a warrant or order of the proper court; and the perpetration of such an act is a crime committed in the name of or under the authority of the owner, and is a trespass against both the law and the peace of the owner, and must be punished as such by the court.

See Forceps.

FORCING, among gardeners, signifies the making trees produce ripe fruit before their usual time. This is done by planting them in a hot-bed against a south wall, and likewise defending them from the injuries of the weather by a glass frame. They should always be grown trees, as young ones are apt to be destroyed by this management. The glasses must be taken off at proper seasons, to admit the benefit of fresh air, and especially of gentle showers.

FORD, John, an early English dramatic author, was born in Devonshire, in 1586, and entered the Middle Temple in 1602, for the purpose of studying law. While there, he published, in 1606, a piece entitled Fame's Memorial, a species of monody on the earl of Pembroke, which poem, considered as the production of a youth, exhibits great freedom of thought and command of language. He printed his first tragedy of the Lover's Melancholy, in 1629. This, however, was not his first play, as a piece of his, entitled A Bad Beginning makes a good Ending, was previously acted at court. He wrote, or assisted to write, at least, eleven dramas; and such as were printed appeared from 1629 to 1634. Most of these were exclusively his own composition; but some of them were written in conjunction with Decker, Drayton, Hatherway, and others. The date of his death is uncertain; but it is thought that he did not long survive 1630. As a dramatic writer, he is often elegant and elevated, and uniformly easy and harmonious. His genius was most inclined to tragedy, and there are too many instances of his works, or of his patronage, which overflows the natural pathos, in which he was by no means deficient. Besides the works already mentioned, a writer in the Censura Literaria has attributed to him an able little manual, entitled A Line of Life pointing to the Immortalité of a virtuous Name (1626, 12mo).

FORE; the distinguishing character of all that part of a ship's frame and machinery which lies near the stem.

FORE AND AFT; throughout the ship's whole length, or from end to end; it also implies, in a line with the keel.

FORE BOW-LINE; the bow-line of the foresail. See Bow Line.

FORE BRACES; ropes applied to the fore yard-arms, to change the position of the foresail occasionally.

FORECASTLE; a short deck placed in the fore part of a ship, above the upper deck; it is usually terminated, both before and behind, in vessels of war, by a breastwork, the foremost part forming the top of the beak head, and the hind part reaching to the after-part of the fore chains.
FORECASTLE MEN; sailors stationed on the forecastle, who are generally prime seamen.

FORECLOSED; in law, signifies the being shut out of the benefit or barred the equity of redemption on mortgages, &c.

FORELAND; a cape or promontory projecting into the sea, as the North and South Forelands.

FORE TACKLE; tackle on the foremost, and also tackle used for stowing the anchor.

FORETOP MEN; men stationed in the foretop, in readiness to set, or take in the smaller sails, and to keep the upper rigging in order.

FORENSIS (Latin), from Forum (q. v.), is often used in modern times; for instance, medicina forensis is the science of medicine as applied in legal processes, as in the examination of bodies of persons suspected of having suffered violence, of the nature and effects of wounds supposed to have caused death, &c. In Germany, this is done by a physician appointed by the government.

FORESHORTENING, in drawing and painting; the art of representing figures of all sorts as they appear to the eye, or to appear to the eye of one who is in a given position. This art, which, in many instances is very difficult, was known to the Greeks; and Pliny speaks particularly as to its being successfully practised by Parrhasius and Pausias. Among the moderns, Correggio must be allowed the palm for excellence in foreshortening. In painting ceilings, it is particularly important. In a celebrated picture of the body of Christ lying horizontally, the figure is so much foreshortened that the toes appear almost to touch the chin.

FORESTALLING is the buying or bargaining for any corn, cattle, or other merchandise, by the way, before it comes to any market or fair to be sold, or as it comes from beyond the seas, or otherwise, towards any port or creek, to sell the same again at a higher price. At the common law, all endeavours to enhance the price of merchandise, and all practices which have a tendency thereto, whether by spreading false rumours, or by purchasing things in a market before the accustomed hour, or by buying and selling again the same thing in the same market, or by such devices, are criminal, and punishable by fine and imprisonment.

FORESTS. The great importance of wood to society, and the rapid decrease of forests, if particular care is not taken of them, have led, in modern times, to a closer attention to the subject of the management of forests, and everything connected with it. The Germans, who first taught mining as a science, were the first who treated scientifically of the management of forests, and established forest academies, in which all branches of the knowledge relating to them are taught. These establishments originated from the increasing scarcity of wood, which rendered the careful management of the forests necessary, and from the plan of raising a revenue on the part of the government by the sale of the wood. Mr Zanthier first introduced instruction in the forest sciences as a particular branch of study at Ilzenburg, in Saxony, a century ago; near the Harz mountains, Prussia soon directed her attention to them; and, at present, no person in that country is appointed to an office in the forest department without having undergone a strict examination in the branches of knowledge connected with the forests, and having served personally in the forests for a considerable length of time. In Saxony, a great part of the land in the Harz mountains is divided into different parts, which are cultivated, improved, and enclosed, the beasts naturally fed into the woody and desert tracts, which were called forests, and, not having been disposed of in the first distribution of lands, were therefore held to belong to the crown. These were filled with great plenty of game, which our royal sportsmen reserved for their own hunting, and an immense revenue was derived from such sport, or from the sale of venison. But every freeman had the full liberty of sporting upon his own territories, provided he abstained from the king's forests. However, upon the Norman conquest, a new doctrine took place, and the right of pursuing and taking all beasts of chase or venery, and such other animals which the master of the household, &c., of the different kingdoms of nature. He is also instructed in the care and chase of game, and in the surveying and cultivation of forests so as to understand the mode of making all kinds of wood, and supplying a new growth as fast as the old is taken away. The pupil is also instructed in the administration of the forest taxes and police, and all that relates to forests considered as a branch of revenue.

France has likewise paid attention to its forests, and has enacted a code for forests, which is a model for others. The English forest laws have reference only to the preservation of game. With regard (says Blackstone, Com., vol. ii. page 415) to the rise and original of the present civil prohibitions on the destruction of game in Europe, it will be found that all forest and game laws were introduced into that part of the world at the same time, and by the same policy, as the feudal system, when the swarms of barbarians issued from their northern hive, and laid the foundation of most of the present kingdoms of Europe on the ruins of the Western empire. For when a conquering general came to settle the economy of a vanished country, and to part it out among his soldiers or feudatories, who were excluded from the sea by the king's will, and were barred from new donations, it behoved him to keep the natives of the country, and all persons who were not his military tenants, in as low a condition as possible, and especially to prohibit them the use of arms. Nothing could do this more effectually than a prohibition of hunting or sporting; and therefore it was the policy of the conqueror to reserve this right to himself and those on whom he should bestow it, who were only his capital feudatories or greater barons. And accordingly we find in the feudal constitution one and the same law prohibiting the rustici in general from bearing arms, and also prescribing the use of snare, nets, or other engines for destroying the game. This exclusive privilege well suited the martial genius of the conquering troops, who delighted in a sport which, in its pursuit and slaughter, bore some resemblance to war. And, indeed, like some of their modern successors, they had no other amusement to entertain their vacant hours, despising all arts as effeminate, and having no other learning than was couched in such rude ditties as were sung at the solemn carousals which succeeded these ancient huntings. And it is remarkable, that, in those nations where the feudal policy remains most uncorrupted, the forest or game laws continue in their highest rigour.

In France, all game was properly the king's; and, in some parts of Germany, it is death for a peasant to be found hunting in the woods of the nobility. In Britain, also, hunting has always been esteemed a most princely diversion and exercise. The whole island was replenished with all sorts of game in the times of the Britons, who lived in a wild and pastoral manner, without enclosing or improving their grounds, and derived much of their subsistence from the chase, which they all enjoyed in common. But when husbandry took place under the Saxon government, and lands began to be cultivated, improved and enclosed, the beasts naturally fled into the woody and desert tracts, which were called forests, and, not having been disposed of in the first distribution of lands, were therefore held to belong to the crown. These were filled with great plenty of game, which our royal sportsmen reserved for their own hunting, and an immense revenue was derived from such sport, or from the sale of venison. But every freeman had the full liberty of sporting upon his own territories, provided he abstained from the king's forests. However, upon the Norman conquest, a new doctrine took place, and the right of pursuing and taking all beasts of chase or venery, and such other animals
as were accounted game, was held to belong to the king, or to such only as were authorized under him.

The right thus newly vested in the crown was exercised with the utmost rigour and oppressions; under the colour of forest law, for the sake of preserving the beasts of chase; to kill any of which, within the limits of the forest, was as penal as the death of a man. And, in pursuance of the same principle, king John laid a total interdict upon the winged as well as the four-footed creation: "exceptam remanum per totam Angliae interdixit." The cruel and insupportable hardships which those forest laws created to the subject, occasioned our ancestors to be as zealous for their reformation, as for the relaxation of the feudal rigours, and the other exactions introduced by the Norman Family; and, accordingly, we find the immunities of carta de foresita as warmly contended for, and extorted from the king with as much difficulty, as those of magna carta itself. By this charter, confirmed in parliament, many forests were disafforested, or stripped of their oppressive privileges; and regulations were made in the regimen of such as remained afterwards, to prevent interior wars and molestation of one another; and as mad no longer a capital offence, but only punished by a fine, imprisonment, or abjuration of the realm. And by a variety of subsequent statutes, together with the long acquiescence of the crown, without exerting the forest laws, this prerogative is now become no longer a grievance to the subject."

FORFEITURE, in law; the effect of a transgression or offence, as the loss of privilege, right, estate, honour, office or effects, either in civil or criminal cases. In civil cases, as when a tenant in tail makes leases not warranted by the statute, a forfeiture is committed, and he who has the immediate recovery may enter upon possession. In criminal cases, it is twofold; of real and personal estates, as by attainder in high treason; or, in petty treason and felony, of all chattel interests absolutely, and the profits of all freehold estates during life and after death, of all lands and tenements in fee simple (but not those in tail), and of the destruction of the royal seal; lands are forfeited upon attainder, and not before; goods and chattels are forfeited by conviction.

FORGE; a little furnace, as that used by smiths, &c., or, simply, a pair of bellows, the muzzle of which is directed upon a smooth area, on which coals are placed. See Bellows.

Forge is also used when speaking of a large furnace, wherein iron ore, taken out of the mine, is melted down; or it is more properly applied to another kind of furnace, wherein the iron ore, melted down and separated in a former furnace, and then cast into sows and pigs, is heated and fused over again, and beaten afterwards with large hammers, and thus rendered more soft, pure, ductile, and fit for use.

FORGE FURNACE. The forge furnace consists of a hearth, upon which a fire may be made, and urged by the action of a large pair of double bellows, the nozle of which is inserted through a wall or partition, and giving a jet of hot air; or, while pots, or small furnaces of every desired form, may be placed, as occasions require, upon the hearth; and, the tube of the bellows being inserted into a hole in the bottom of the furnace, it becomes easy to raise the heat to almost any degree required.

Force is also used to signify fraudulent making or alteration of a writing in the prejudice of another man's rights, or making, nato animo, of any written instrument for the purpose of fraud and deceit; the word making, in this last definition, being considered as including every alteration of, or addition to, a true instrument. Besides the offence of forgery at common law, which is of the degree only of misdemeanour, there are very numerous forgeries especially subjected to punishments, by the enactments of a variety of English statutes, which, for the most part, make the forgeries to which they relate capital offences. The nature of forgeries may be complete, though there be no publication or uttering of the forged instrument; for the very making with a fraudulent intention, and without lawful authority of any instrument, which, at common law, or by statute is the subject of forgery, is of itself a sufficient completion of the offence, before publication. Most of the statutes, however, which relate to forgery, make the publication of the forged instrument, with knowledge of the fact, a substantive offence. It is said by Hawkins (P. C., c. 70, s. 2), that the notion of forgery does not seem to consist in the counterfeiting of a man's hand and seal, which may often be done innocently, but in the making of a document with the appearance of truth to a more deceit and falsity, and either to impose that upon the world as the solemn act of another, which he is in no way privy to, or at least to make a man's own act appear to have been done at a time when it was not done, and, by force of such an act, to acquire any property thereby. As justice, it ought not to have. A deed forged in the name of a person who never had existence, is forgery at law, as was determined in Bolland's case. (O. B., 1772; 1 Leach, 83; 2 East's P. C., 19, sec. 49.) A writing is forged where one, being directed to draw up a will for a sick person, doth insert some legacies therein falsely out of his own head. It is not material whether a forged instrument be drawn in such manner that, if it were in truth that which it counterfeits, it would be valid. The punishment of forgery at common law is, as for a misdemeanour, by fine, imprisonment, and such other corporal punishment as the court in its discretion shall award. The punishments ordained for the offence by the statute law in England are, with scarcely an exception, capital. In America, the punishment is generally imprisonment, with hard labour for a term of years, or for life, according to the degree of the offence.

FORGET-ME-NOT. The forget-me-not is a herbaceous plant, common in wet places throughout all Europe and a great part of North America. The root is perennial; the stem about a foot high, bearing alternate and lanceolate leaves, and small blue flowers, disposed in long, lateral, and terminal spikes; the corolla is longer than the calyx, tubular at the base, with a flat border divided into five equal segments; the stamens are five, and the style single; the fruit consists of four naked seeds. It belongs to the natural order boraginaceae. The brilliance of the flowers renders them conspicuous, notwithstanding their diminutive size; and it is considered the emblem of friendship among the nations of the whole of Europe, probably owing to its clear blue, the colour of fidelity. This little flower plays a conspicuous part in albums.

FOUR. Forks are first mentioned in an inventory of a prince's plate, in 1379. Before this period, the knife only was used for cutting food. The use of the fork spread from Italy to the northern parts of Europe. Thomas Coryate is said to have introduced it into England. The use of the fork was considered so great a luxury, that many monastic orders forbade their members to indulge in it. The Austrians, in order to reinforce the Turks, is also the case with the Turks. The Chinese, instead of forks, make use of two small sticks, which
FORLl.—FORMOSA.

they hold in the same land between different fangers.

See Cutlery.

FORLI (anciently Forum Livii) ; a town in Italy, in the States of the Church, capital of a delegation; 14 mi. S.W. of Ravenna, lat. 44° 06' N.; pop. 12,000.

It is a bishop’s see. It contains a cathedral, nine churches, twenty-three convents, an academy of sciences, and a university with a library. It is surrounded with strong walls and solid towers, the flanks of which are fortified, and the ditches are large, and defended with low works. Population of the delegation, 165,000.

FORLORN HOPE, in the military art, signifies men detached from several regiments, or otherwise appointed, to make the first attack in the day of battle, or, at a siege, to storm the counterguard, mount the breach, or the like. They are so called from the great danger they are unavoidably exposed to.

FORM, Printer's; an assemblage of letters, words, and lines, disposed into pages by the compositor, and from which the printed sheets are taken.

FORMATION, Geological. By this term is understood a mineral bed or stratum, differing essentially from that lying beneath and the one above, both in its aspect, its mineral constituents, and its fossil contents, if any are found in it. In most of the formations, there are some mineral and fossil affinities; and in many, even where the external differences are apparently complete, there are some common characters, by the aid of which a passage from the one to the other can be traced. Thus the chalk differs essentially, both from the green sand which lies beneath it, and the plastic clay which lies above it, in its aspect, its mineral constituents, and many of its fossil contents. Yet the green sand passes into the chalk, and this last into the chalk. Their common characters are almost obvious enough to warrant our classing all the beds of chalk and green sand in one formation, did not the cretaceous and flinty characters of the first distinguish it, in a marked manner, from all the rest.

By formation, also, is meant an assemblage of beds, distinct from each other, but lying in a group in a determinate order, the whole having a common character or affinity, and being constantly found in a particular part of the geological series, overlying another formation distinct from itself. The oolitic series is of this kind; the unknown oolitic character, from the cast to the Portland oolite inclusive, notwithstanding the important deposits of Kimmeridge clay, Oxford clay, &c., which occasionally separate the calcareous beds. The coal formation, also, which is a series of alternate beds of coal, slate clay, sandstone, and limestone, is illustrative of this kind of formation. Coal, it is true, is occasionally found in the inferior deposits of the millstone grit, the carboniferous limestone, &c., and under circumstances that might warrant our classing them all in one group, as has been done with the oolitic series, from the prevalence of the oolitic character; but, as fossil coal is only worked profitably in beds, above the carboniferous limestone, the term coal formation is more properly restricted, for the present, to those beds, until a more enlarged experience shall produce a more philosophical arrangement of the whole series.

The unvarying succession of formations to each other, in the geological series, has been found to exist in parts of the earth widely separated from each other, and warrants, not only the belief that they have come into their order successively, but that the causes which brought each formation to its place were of one class, whether of igneous or of aqueous origin, and operated simultaneously. Whether we consider the invariable succession, in all the observed parts of our planet, of the gneiss to the granite, the mica to the gneiss, and of the subsequent primitive limestones and slates, we cannot but look to a corresponding and regular succession of causes, for the production of these uniform results. And, although the order and continuity of the series are much interrupted occasionally, it is less difficult to believe, that particular circumstances have interrupted such succession and continuity, than that they have not so done. One general law, probably, has operated through the whole.
FORMOSA — FORSTER. 235
give to the whole island. Between Formosa and the continent are a number of small islands, called Peng-
ho by the Chinese, and Picadores by the Euro-
peans. Formosa has a small archipelago of which only is inhabited by a Chinese garrison, under the command of a mandarin. Lon. 120° to
122° E.; lat. 22° 5' to 25° 20' N.
FORMOSA; an island in the Atlantic, near the
coast of Africa, about six miles long and one wide. The soil is fertile, and covered with trees, being
want springs of good water. Lon. 14° 20' W.; lat. 11° 29' N.
FORMOSA, or BENIN, or ARGON; a river of
Benin, which rises in the interior, and runs into the
Atlantic; lon. 5° 20' E.; lat. 5° 30' N. It is four
miles wide at its mouth, but has only twelve feet
water. Its origin and upper part of its course are
unknown, and it is supposed, by some, to be the
termination of the Niger. For several leagues up
the river, the land is low and marshy, but the banks
are adorned with lofty trees, and divided by branches
of the river into a number of islands, which renders
it healthy. In the river is a species of unwholesome,
and mosquitoes innumerable.
FÖRRÈS, the name of a parish and burgh of
Scotland, in the county of Moray. The burgh is
twelve miles W. of Elgin, ninety-two N.W. of
Aberdeen, and 212 N. of Edinburgh. Shakespeare
has given the name of Förrès to a second voyage of
Niebuhr, one of the chief events in his tragedy of Macbeth. The
site of the old castle where Duncan was killed is at
the western side of the town, and the heath which
surrounds it is still " blasted," being one of the most
FORSKAL, Peder, a Swedish botanist, and pupil
of Linnaeus, was born in 1736, and studied at Gött-
ingen, where he defended, in 1756, a thesis—Dubia
de Principis Philosophiae recentioris. A French
pamphlet (Thoughts on Civil Liberty), which he
published soon after his return to Sweden, offended
the ruling oligarchy in that country. He was then
invited to Copenhagen as a professor; and, on the
recommendation of Linnaeus, he was selected, by
Frederick V., to join the scientific expedition to Arabia,
to take charge of the department of natural history.
In 1761, he set out on this expedition with Carsten
Niebuhr, and afterwards collected plants in the emirales of Marseilles, of which he
published a Flora at Malta. He arrived in Egypt
and Arabia, where he collected plants with the
greatest zeal; but, being attacked by the plague, he
died in 1763, at Djerim, in the latter country, too
early for science. Nielbhr collected Forskål's papers,
which consisted mainly of deposed sheets, accoun-
ted them with remarks, and published them under the
title Descriptiones Animalium, Aevium, Amphibi-
orum, Piscium, Insectorum, quae in Itinere Orientali
observavit P. Forskali (Copenhagen, 1775, with
an engraving). The systematic catalogue, in Latin,
Greek, and Arabic, is followed by about three hun-
dred descriptions of animals, &c., arranged according
to the Linnean system, and also the materia medica
of the principal apothecaries of Cairo. Besides this
work were also published Flora Aegyptiaco-Arabica,
&c. (ibid.); Icones Iterum Naturalium, quae in Itinere
Orientali depingi curavit Forskali (ibid., 1775, with
forty-six engravings, of which twenty represent plants and twenty-three animals). The drawings
are by Bruenfleid, the painter of the expedition, who
likewise died in the East. Linneus called an
exotic plant Forskales, in honour of his pupil.
Forster, John Richardson, Prussian professor of
natural history at Halle, was born at Dirschau, Oct.
22, 1729. His family, which was descended from an
ancient house in Scotland, had fled to Polish Prussia.
His father was burgomaster of Dirschau, a town
not far from Dantzic. Reinhold became thoroughly
grounded in the languages, chronology, and geography
of the ancient world, became, in Berlin, a member of
the Prussian Academy of Sciences; and, in 1751, he went to Petersburg, and ob-
tained the place of preacher at Nassenhuben or Nas-
enhof. He gave just so much attention to his office
as necessity required, and entered with his whole soul
into his favourite studies—mathematics, philosophy,
history, geography, and the indigenous language.
For travel, he was sent by a commission to examine the state of the colony of Saratov, in
Asia, for which he set out in March, 1765.
His official report gave much satisfaction; and, after
his return to Petersburg, he was commissioned, with
several other distinguished men, by the empress
Catherine II., to draw up a code of laws for the
colonists. But his activity was, not rewarded as he
had expected; and, having lost the place of preacher
by his long absence, he went to London in August,
1766, without having received the least compen-
sation. Here he supported himself and his son George
by translations of the curiosities of the press, which
he collected in his travels, and partly by translations.
He afterwards joined a dissenting academy at War-
rington in Lancashire, as teacher of natural history
and the French and German languages. He was
finally invited to accompany captain Cook, in his
discovery, and was given an immediate command of an
expedition. He set out from London June 26, 1772,
with his son, at that time seventeen years old. This
voyage, which lasted three years, is minutely
described in a work bearing the name of his son, George
Forster (London, 1777, 2 vols. 4to), as it was made
a work with the father that he should not print any
account of this voyage. The father afterwards pub-
lished his valuable remarks on the physical geography,
the natural history, and the moral and intellectual
condition of the countries he had visited (London,
1778, 4to). The publication of the account of the
voyage gave offence to the British government, and
deprieved Forster of the chance of further patronage
from that quarter; and he remained for some time in
straitened circumstances. In 1780, he was invited to
Halle, as professor of natural history, and continued
an ornament of the university until his death, eigh-
teen years afterwards. At Halle, he wrote many
valuable works, and translated the latest voyages,
among which was the third voyage of Cook. He
died December 9, 1798. He united great penetra-
tion and quick apprehension with an astonishing
memory. He spoke or wrote seventeen living and
dead languages; and was well acquainted with every
department of literature. In history, botany, and
zoology, he stands, with his son, among the first
investigators of the last century. Of his numerous
writings, the best are his Observations on a Voyage
round the World, already mentioned, his History of
Voyages and Discoveries in the North, and his
Antiquarian Researches of the History of the Ancients.
His style is strong and animated, though not perfectly
pure.
Forster, John George Adam, son of the
preceeding, was born November 26, 1754, at Nassen-
huben, near Dantzic. He accompanied his father, at
the age of eleven years, to Saratov, and continued,
in Petersburg, the studies which he had begun under
his father's direction. When his father went to
England, he was placed with a merchant in London;
but his feeble health soon compelled him to give up
mercantile pursuits; and he resided in his own house
in Warlington, where he continued his studies, trans-
lated several works into English, and taught German
and French in a school of the neighbourhood. In com-
pany with his father he performed the voyage round
the world with Cook, 1772—1775. In 1777, he went to Paris with the intention of settling there, but soon after went to Holland, and was on his way to Brazil when the last of the House of Orange offered him the chair of natural history in an academy in Cassel. He held that office till 1784, when he accepted an invitation to become professor of natural history at Wilna. Here he received the degree of doctor of medicine. The empress Catharine, in 1787, formed the expedition on a voyage round the world, and Forster was named historiographer of the expedition. The war with Turkey interrupted the project, and Forster, unwilling to remain idle, returned to Germany, and published several treatises on natural history and literary subjects. In 1788, the elector of Mentz appointed him his first librarian. Forster occupied this post with great reputation, till the French entered the city, in 1792. He had warmly embraced revolutionist principles, and was sent to Paris, by the republicans of Mentz, to request a union with France. While absent on this commission, the Prussians recovered the city. By this event, he lost all his property with his books and papers. He found himself completely ruined. He now separated from a beloved wife, who, at his request, married his friend Huber, and adopted the resolution of going to India. With this view he began the study of the Oriental languages, but sank under the repeated shocks of the last year, and died, at Berlin, January 12, 1794. Forster is considered by the Germans one of their classical writers. In his prose he united French lightness with English force. His translations are numerous. The excellent account of Cook’s second voyage round the world he wrote in connexion with his father. He also wrote Essays on Moral and Natural Geography, Natural History, Practical Philosopy, 6 vols, and excellent Views of the Lower Rhine, Brabant, Flanders, Holland, England, and France, in 1790, 3 vols. He has also the merit of having transplanted into the German soil the celebrated Indian drama, the Sacontala of Kalidasa.

Forster, George; an English traveller, who has been confounded with the subject of the last article, and of whose personal history, unconnected with his travels, very little information can be obtained. He was, in 1782, engaged in the civil service of the East India company. He spoke Hinduvi with uncommon correctness and facility. Persic was familiar to him, and he had made a good deal in that dialect of it spoken by the Mahtrattas he was much more conversant. Thus qualified, in August, 1782, he commenced a journey from Bengal to Persia, and thence through Russia to England. Some account of Mr Forster’s expedition appeared in 1790; but a fuller narrative was published in 1798, under the title of A Journey from Bengal to England, through the Northern part of India, Cashmere, Afghanistan, and Persia, and into Russia, by the Caspian Sea, 2 vols, 4to; which work was translated into French.

The author travelled chiefly in the character of a Mohammedan merchant, which his knowledge of the Asiatic languages and customs enabled him to support. His information was derived rather from inquiry and observation than from books; and when he relates what he had seen, his veracity may be trusted; but his historical disquisitions are frequently inaccurate.

He returned to India, and was preparing for further research in the part of the world, when his death took place at Allmahabad, in 1792.

Fort; a small fortified place, surrounded with a ditch, rampart, and pampet, for the purpose of defending a pass, river, road, harbour, &c. Forts are made of different forms and extent, according to the circumstances of the case.

Forteventura, or Fuerteventura, one of the Canary islands, about fifty miles in length, and from eight to twenty-four broad. The soil is in general, fertile in corn, roots, and fruits, and beautifully diversified by the Legislation of the island, and of Lanzicotta, is exceedingly wholesome. Lat. 28° 4' N.; lon. 14° 32' W.; population, according to Minio, in 1826, 12,451.

Forth, a large and beautiful river of Scotland, which takes its rise from a spring in the north side of Benlolomd mountain, in Stirlingshire, and, running from west to east, nearly the whole breadth of the kingdom, forms that fork, or arm of the German ocean, to which it gives its name. It traverses Stirlingshire for ten miles, under the appellation of the water of Ducharly, augmented, as it proceeds, by a number of mountain streams. It then enters Fertilshire, where, in a winding course, it flows in Aberfoyle. The northern branch issues from a beautiful lake called Loch Chon, from which it is precipitated, in full stream, over a perpendicular rock; it then forms another expansion, a third, and a fourth, before it descends into the low country, to unite with the eastern parts. January 12, 1794, Forster is considered by the Germans one of their classical writers. In his prose he united French lightness with English force. His translations are numerous. The excellent account of Cook’s second voyage round the world he wrote in connexion with his father. He also wrote Essays on Moral and Natural Geography, Natural History, Practical Philosophy, 6 vols, and excellent Views of the Lower Rhine, Brabant, Flanders, Holland, England, and France, in 1790, 3 vols. He has also the merit of having transplanted into the German soil the celebrated Indian drama, the Sacontala of Kalidasa.

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describes it in a few words: The ancients, he says, found that a wall ought not to be constructed in a straight line, because a breach could easily be made by the battering-ram; but the towers which they built at short distances from each other, formed a barrier capable of repelling almost all attacks. If the enemy attempted to employ his scaling ladders, he exposed himself to missiles on all sides, even from his rear. With the introduction of artillery in sieges, the art of fortification underwent a great change. Bastions took the place of towers. The timely-dug intrenchments often proved as effective as walls. Fortifications are constructed from which resistance is not easily ascertainable. It is certain, however, that they were in use in 1500. Some ascribe this important invention to Ziska, the celebrated leader of the Hussites. He fortified Mount Tabor with bastions. Folard is of opinion that Achmet-Pacha constructed bastions at Otranto, which he took in 1480. According to others, the Veronese San-Micheli was the inventor of them. In Germany, Daniel Speckel, an engineer of Strasburg, (who died in 1589), wrote a work on fortifications, in which he calls himself the first German who had written on triangular bastions. The Italians and the French, however, continued the character of fortifications. Fortifications are divided into regular and irregular, durable and temporary. In regular fortifications, the bastions are all equal, and form regular figures, mostly equiangular and equilateral polygons. In irregular fortifications, only the corresponding sides and angles are equal. These are most common, as the inequalities in the ground seldom admit of regular fortification. The regular fortifications are, however, much to be preferred, as they offer equal resistance on all sides, and expose no weak points, of which the enemy can take advantage. The construction of irregular fortifications is often rendered difficult by the character of the ground, and its diversity of the works. In spite of the greatest exertions to make every point equally strong, the most skilful engineer often fails. The first fortresses of Europe prove this. Durable fortifications are employed in places which are destined to oppose a permanent barrier to hostile attacks; temporary fortifications are such as are designed merely to throw momentary obstacles in the way of the enemy, as field-works, &c. Fortifications are further divided into natural and artificial, ancient and modern, offensive and defensive. The first are those in which nature has already formed the works, the walls, or moat, to the advantage of the enemy, or such as require little assistance from art. Artificial fortifications, on the other hand, are those in which the most important parts are constructed by art, though, even in these, the assistance of nature cannot be dispensed with. A place is rarely found which is sufficiently strong without much assistance from art. The principal distinction between ancient and modern fortifications is that already mentioned, that simple walls, with towers, are the essential parts of the former, and bastions of the latter. Offensive fortifications are constructed with a view to attack the enemy, while the defensive are only calculated to repel him. This distinction gives a different character to the two sorts of fortifications. The science of fortification forms one of the most interesting and difficult of the military sciences. In modern times, it has undergone important and considerable changes, in accordance with the whole art of war. To these the great Carnot contributed not less than to the change of field tactics. One of the most remarkable fortifications existing, is the fortress of Ehrenbreitstein, on the Rhine, opposite Koblenz. The most approved principles and devices of modern engineers have been here put in application. Since the origin of the modern art of fortification engineers have adopted different systems: the whole art, however, depends on the skilful resolution of the four following problems:—1. to dispose the different works in such a manner, that they may be exposed as little as possible to the fire of the enemy, and may be capable of repelling and withstanding his attacks; 2. to make the works so as not to require too many men for their defence. The systems of fortification, which have the most and particular reputation in Europe, are those of count Pagan, baron de Coehorn, von Schelte, and marshal Vauban. See Fortress.
mit, ought to be filled with water. Outside of the ditch, a low breastwork (the space within which is called the covered way) surrounds the fortress, and sinks to the level of the field, with a gentle declivity (the glacis), so constructed that every shot from the rampart can graze its surface. The outworks and the particular defences, such as mines, towers, blockhouses, abatis, palisades, &c., lie partly in the ditch, partly in the covered way, and partly yet more in advance and separate from the fortress. The Italian, Spanish, French, Dutch, &c. systems of fortification are all different. They differ in respect to the arrangement of the parts, the contrivance of the lines of defence, and the more or less artificial combination of the same works. The annexed illustration of one of Marshal de Vauban's systems of fortification, who was engaged in the service of Louis XIV., will give the reader an idea of the signification of the names of the principal parts of a fortress.

![Diagram of a Bastion]

The part C A B D is called the bastion. C A and A B are walls called the faces of the bastion, and C G, B D are the flanks; D H is the curtain; the distance G D the gorge of the bastion. A is called the flanked angle, and a line drawn from this angle to the farther end of either of its corresponding curtains, as H, i.e., the line A H, is called the line of defence. The angles C and B are called the angles of the shoulder, and the angles G D H are angles of the flank. Within the fortification two lines are drawn, running parallel to the outline of the works, G A B D H E, one at the distance of three toises (French), and the other at eight; the space between them is called the rampart, and the space between the wall and the nearest line is called the parapet. Within the rampart, and at a distance of four feet from the parapet, there is a small step raised called the banquet. The rampart is elevated above the ground ten or twelve feet, as circumstances may require, the banquet being raised two or three feet higher, and the parapet four feet higher than this, in order to defend the men standing upon the banquet from the fire of the besiegers.

Castriotto invented a method of fortification by bastions as early as 1684; and, ten years afterwards, another was given by Errard de Bar le Duc. The method proposed by Narchi, in 1599, is shewn below.

![Diagram of Castriotto's Method]

The method of Count de Pagan, invented in 1645, is shewn below. It consisted of one or other of two forms, one with an envelope, shewn in the portion of the figure to the left of the line A, and the other with counter guards, as seen on the right side of the line A.

![Diagram of Pagan's Method]

Vauban, mentioned above, followed Pagan, and besides improving on the system of that scientific military engineer, prepared three different methods that still go by his name, and which are described in his treatise "De l'Attaque et de la Défense," Paris, 1737. The first of these methods is shewn in the first engraving in this article, and bears the date of 1680. The second method was suggested on his being sent to repair the fortifications of Landau, in 1684, which was surrounded by a wall having high towers at the angles. He constructed large bastions round these towers, and thus effected a double defence. The third method, represented below, does not differ materially from the second. It was executed at New Brusc in 1698.

![Diagram of Vauban's First Method]

Baron Coehorn invented three different forms of a fortification, chiefly adapted for low and swampy situations; the second of these, described in his work, is shewn below.

![Diagram of Coehorn's Second Method]

The last of the systems of fortification which we shall illustrate, is that of M. Montalembert, eminent as a man of science and a military officer, in the latter part of the eighteenth century. Montalembert's system was so much approved of by Napoleon, that he adopted it in the fortification of Alessandria.

![Diagram of Montalembert's System]
basis for various operations; as a support for military positions; as a resting place for pursued or beaten forces, or a rallying point for such as would recover breath, and renew their courage. Prosperity spurs enterprising spirits; and the idea of fresh enterprises; consequently as an arsenal, magazine, &c. A fortress which lies out of the way of invasion, and, consequently, can be passed by with ease, and which, moreover, is small, and an object of little consideration with any enemy, answers no good end of delay of invasion but very lust, and does more harm than good, be it ever so strong, since, without rendering any essential service, it keeps a detachment of troops, as its garrison, in a state of inactivity, and is very expensive. Considerable benefit has been expected from a chain of fortresses, the constituent parts of which should mutually assist each other, and bring an enemy, attempting to pass them, between two fires. But to make this scheme feasible, the forts must have active commandes, able to conduct sallies with skill, and indefatigable troops; and the enemy must be imprudent enough not to concentrate all his forces in an attempt to burst through the chain at some point. The experience of the years 1814 and 1815 has shown that these expected advantages did not exist, although several remarkable instances proved that the event might have been in favour of the scheme, under other circumstances. Scientifically considered, the site of the place of enterprise is the more important, as it is a fortress. It should be such as to afford facilities of obstructing an enemy's approach; such as will admit of suitable and scientific works without too great expense; such as will command a complete view of every point within gun-shot, and, at the same time, be commanded by no point within that compass. Lastly, a fortress must be so situated as not to be unhealthy, and to be as little as possible liable to be cut off; that is, its position near the sea or some river should be such as to render it practicable and convenient at any time to receive supplies, and maintain a connexion with troops in the field. The strength of a fortress does not consist in its magnitude. On the contrary, extensive, populous places are difficult to maintain, as they require numerous garrisons, and large quantities of ammunition and provisions, and uncommon watchfulness and activity in the commander. The accuracy and ingenuity of fortification are in this science, and scientific works do not necessarily contribute to make a fortress the more tenable. They are even, in many cases, injurious. It is not the numbers of a garrison that gives strength to a fortress. It is much better to have a well proportioned force; otherwise the defenders are in each other's way, consume the stores, and are deprived of their proper efficiency and usefulness in action.

FORT-ROYAL — FOSCOLO. 239

Many temples were erected to her at Rome. She is generally delineated with tworenders, with one of which she guides the ship of her lover through the waves of the Mediterranean. In a later period, she was represented with a handglobe over her eyes, and a sceptre in her hand, and sitting or standing on a wheel or globe. She is usually dressed as a matron. Different symbols of Fortuna are found in different gems; e.g., a circle drawn over a globe, or a globe between two rivers. Fortuna, when she is represented having a wheel standing on it. On a coin of the emperor Geta, she is represented sitting on the earth, with her bosom bare, her right hand resting on a wheel, and holding in her left hand, resting on her lap, a horn of plenty. Her rudder is supported sometimes on a globe, at others, on a wheel, and at others on the beak of a ship. She was often represented with wings, but never so by the Romans; for they said, that, having flown over the whole earth, without resting any where, she at length alighted on the Palatine mount, laid aside her wings, and descended from her globe, to remain forever in Rome.

FORTUNATE ISLANDS. See Canarians.

FORUM, among the Romans; any open place where the market and courts of justice were held. The forum Romanum was a splendid place, which served for a public walk, and was called, on account of its size, forum magnum. As the population of Rome increased, some inclosed places were made, to form markets and the courts of justice. The number of these places was finally increased to seventeen. The great Roman forum, which was bounded on the south by mount Palatine, and on the north-west by the Capitoline hill, and which was called the forum by way of eminence, was destined, by Romulus, for the assemblies of the people. Tarquinius Priscus surrounded it with porticoes, by which means the people were protected against the weather. In these buildings, stagings were raised, from which the plays represented in the market-place were seen, before the erection of theatres. The forum was afterwards adorned with such an immense number of statues, taken thither from Greece, that it became necessary to remove many of them. The gilt statues of the twelve great gods were particularly remarkable. This place, once adorned with the most beautiful palaces and temples, the buildings of which were called campo vaccino (field of cattle), and is almost a waste, but is covered with numerous relics of its former majesty. In the law, forum signifies a court of justice, the place where disputed rights are settled; hence forum competens, a competent jurisdiction, under which the cause regularly falls. Forum incompetens, on the contrary, is a court not authorized to try the case. Forum contractus is the jurisdiction of the place where the contract is made; forum delicti (commnis) is the jurisdiction of the place where the crime is committed; forum domicilii and forum habitationis (see Domicile); forum apprehensionis, where the crime is apprehended; forum ursii, where the person is born; forum rei sitae is the jurisdiction of the place where the thing in dispute is situated; forum privilegiatum is a tribunal under the jurisdiction of which any one comes on account of his personal or official character. The clergy, for example (in some countries), have a forum privilegiatum, as they do not come under the jurisdiction of common courts, but under that of a consistorium. In the same manner, students in the German universities are under the jurisdiction of an academical court.

FOSCOLO, Ugo, an Italian poet and prose writer, was born on board a Venetian frigate, near the island of Zante, about 1776, and educated at the university of Padua. He made his appearance as a dramatic poet, at Venice, a year before the fall of that repub-
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and feeling, under the title Ultima Lettere di Jacopo Ortis (Milan, 1802). An imitation of Werner is observable in this work, but it is the political matter interwoven in it, and a sort of melancholy patriotism about the work, which made it so generally attractive to the Italians. The style is excellent. Foscolo then went to Milan, where his friend general Pino procured him a military commission. In 1803, he wrote a satire on some learned men, under the form of a commentary on the Hair of Berenice, a poem of Callimachus, translated by Catullus. When some of the French troops were returning to France, Foscolo and a party of Milanese retired. After his return, 1807, he published the small poem Dei Sepolcri, in which he handled the Milanese severely. The critics justly found fault with his verse, as rough and unmusical, and he determined therefore to try another path. He undertook an edition of the works of Montecuculi, from the original manuscripts. This important undertaking was not accomplished entirely to the satisfaction of competent judges, who accused him of ignorance of the fundamental principles of the art of war, and of too great freedom in supplying defective passages in the manuscripts. When Monti, of whom he had been a friend and defender, was on the point of publishing a translation of the Iliad, Foscolo produced a translation of the first book, accompanied with remarks evidently directed against Monti. This produced a coolness between the two friends; and Foscolo was thought to have written his two tragedies Ricciarda and Ajoce with the same view. But the government, who found other feelings in these pieces, ordered him to leave Milan. To save appearances, his friend Pino sent him, with a pretended commission, to Mantua. Here he lived until the abdication of Napoleon. He advocated, with great warmth, the independence of Italy. When Murat began the war, he became embroiled with those to whom he found it necessary to leave Italy. He retired to Switzerland, then to Russia. In 1815, he went to London, where his reputation secured him a favourable reception from the most distinguished literati of the country. He took part in the contest about the digamma, and contributed many articles to the English periodicals, among which were two on Dante, in the twenty-ninth and thirtieth volumes of the Edinburgh Review. The forty-eighth number of the Quarterly Review contains a critique on his Ricciarda. His Essays on Petrarch (London, 1821), and his Discorsi sul Testo di Dante (1820), are valuable. At the time of the overthrow of the ancient aristocracy of Venice, and the establishment of a democracy, Foscolo showed himself an ardent advocate of the new principles. But his prospects of advancement in the new republic were cut off by the cession of Venice to Austria. To divert his mind, he wrote a comedy, well adapted for exercise of the powers of thought and feeling, under the title Ultima Lettere di Jacopo Ortis (Milan, 1802). An imitation of Werner is observable in this work, but it is the political matter interwoven in it, and a sort of melancholy patriotism about the work, which made it so generally attractive to the Italians. The style is excellent. Foscolo then went to Milan, where his friend general Pino procured him a military commission. In 1803, he wrote a satire on some learned men, under the form of a commentary on the Hair of Berenice, a poem of Callimachus, translated by Catullus. When some of the French troops were returning to France, Foscolo and a party of Milanese retired. After his return, 1807, he published the small poem Dei Sepolcri, in which he handled the Milanese severely. The critics justly found fault with his verse, as rough and unmusical, and he determined therefore to try another path. 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Africa, described by captain Clapperton, the Fellatahs are esteemed the most remarkable. The publication of their skin is a light bronze, like that of the Wadrengans, or Melano-Gentilians, and by this characteristic alone can they be classed in the Ethiopian variety of the human species. The Fellatahs are a warlike race of shepherds, and have, within a short period, subjegated an extensive portion of Souadian. The language could not be understood at Timbuctoo; Mayor Dussaud, however, of whose conversation with the Governor, thence obtained an account of the language and general customs. The king of the Parlous declared that the Fellatahs are not of Arabic origin, and believe the object of such as visit them to be, to get possession of their mines and their country.

In the communication of Mr Hodgson, quoted above, a short vocabulary of the Foulah language is given; and the reader then observes, "This vocabulary shows that the Fellatahs are not of Arabic origin, as suggested by the Revue Britannique (January number, 1829); nor of Berber, as M. Mollien seems inclined to think. This nation, issued, probably, from the elevated plateau of the sources of the Niger. As the Fellatahs are found in the vicinity of Abyssinia, they would be identified with the Falahs of that country, if their language should be ascertained to be the same. Bruce says that the Falahs are Jews, and speak the ancient Ethiopian. About this language little is known. Negro languages possess a peculiar character. An investigation of the idioms of Tibbou, Bornou, Houss, and Timbuctoo, discovers that they have no distinctions of gender and number. Perhaps verbs are not inflected. If the complex languages of the Tuaricks on the north, and the Fellatahs to the south, which manifest so extensive paralles of latitude, be compared with the simple, rude dialect of Souadian, it might be inferred that the great Author of the universe has made as broad a difference in the speech as in the skins of men.

As this people may become of importance in the history of the progress of Christianity and civilization in Africa, we annex this vocabulary, which the student of general philology may find a useful addition to the vocabularies given by Caillié.

FOULAH—FOUNDER.

which they afterwards purchase stuffs at Kankan and Summatikia. The Foulahs are warlike, and ardently love their country, &c. [See, the Lon. Antiq. vol. i. page 222 et seq.] The Foulahs are very suspicious of Christians, and believe the object of such as visit them to be, to get possession of their mines and their country.

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FOUNDLING; a child abandoned by its parents, and found by strangers. Though infanticide was not punished among the ancient nations, yet natural feeling would prompt some cases to expose their infants lest they should fall into the hands of those that were about to murder them. It is not uncommon to meet with the record of infanticide in the accounts of ancient cities. The very names of infan
ticide and called foundlings or fountains, points, columns, and fountains, which is at present a crime by the laws of all civilized nations. Even in ancient times, the state made provision for the preservation of exposed children; but foundling hospitals are an institution of modern times.

The foundling hospital in Paris was established in 1639, and, up to 1807, had received 464,628 children. In France, the number of foundlings, in 1784, was 40,000; in 1798, more than 51,000, and, in 1822, 138,500. (See the prize essay of Benoist de Chateauneuf, Considérations sur les Enfants Trouvés dans les Principaux États de l'Europe, 1824.) Considerations of this nature have increased, and the number of foundlings has increased, in the last forty years, in almost all European countries, but in the greatest proportion in France. Foundling hospitals diminish not only the exposing of children, but also render infanticide and intentional abortion less frequent. In many cases, the children are better nursed and educated than they would be at home by bad parents and bad nurses. The objection that foundling hospitals contribute to the corruption of morals is sufficiently answered by the preservation of so many unfortunate beings from destruction. The objection formerly drawn from the great mortality in foundling hospitals, has been removed in a great degree by improvements in the regulation of these establishments, particularly by sending the children into the country to be nursed under proper superintendence.

FOUNT, or FONT, among printers, &c.; a set of types, sorted for use, that includes running letters, large and small capitals, single letters, double letters, points, commas, lines, numerals, &c.; as a font of English, of Pica, Bourgeois, &c. A fount of 100,000 characters, which is a common fount, would contain 5000 types of a, 3000 of e, 11,000 of o, 6000 of i, 3000 of m, and about 30 or 40 of k, x, y, and z. But this is only to be understood of the lower-case types in any upper case hands, of which we need not here enumerate.

FOUNTAIN, or ARTIFICIAL FOUNTAIN, in hydraulics; a machine or contrivance by which water is violently spouted or darted up; called also a jet d'eau. There are various kinds of artificial fountains, but all formed by a pressure, of one sort or another, upon the water; viz., either the pressure or weight of a head of water, or the pressure arising from the spring and elasticity of the air, &c. When these are formed by the pressure of a head of water, or any other fluid of the same kind with the fountain, or jet, then will this spout up merely to the same height as that head, almost only a little for the resistance of the air, with that of the adju
tage, &c., in the fluid rushing through; but, when the fountain is assisted by a wind, or other force, the pressure of a column of the same fluid with itself, it will rise to such a height as is nearly equal to the altitude of a column of fluid which is equal to the given force that produces the fountain. In Greece, every principal town had public fountains or conduits, some of which were of handsome design and of beautiful execution. In the city of Megara, in Achaea, there was a public fountain established by Thagones, which was celebrated for its grandeur and magnificence. The Pirée, a fountain at Cor-

ith, was encircled by an enclosure of white marble, which was sculptured into various grotesques, from which the water ran into a splendid basin of the same material. Another fountain in Corinth, which was called Lernaios, was encircled by a super
tico, under which were seats for the public to sit upon during the extreme heats of summer, to enjoy the cool air from the falling waters. In the sacred wood of Æsculapius at Epidaurus, there was a fountain that Pausanias cites as remarkable for the beauty of its decorations. At Messina there were also two elegant fountains, one called Arisinoë, and the other Clepsydra. Pausanias also alludes to several other fountains in various parts of Greece, celebrated for the grandeur and beauty of their architectural and sculptural decorations.

The ancient fondness for fountains still exists in Italy and the East. The French are celebrated for their fountains, but Italy, more particularly Rome, is still more so. The fountains of Paris and of the Tuileries, of the orangery at Versailles, at St Cloud, and other places in the neighbourhood of Paris, are celebrated for their beauty. The principal and most admired fountains at or near Rome, are those in front of St Peter's, of the Villa Aldobrandini at Frascati, of the Termini, of mount Janiculum, of the gardens of the Belvedere, in the Vatican, of the Villa Borghese, which has also in the audience chamber a splendid fountain of silver, five Roman palms in height, ornamented with columns, vases and flowers; the fountains of Trevi, the three fountains of St Paul, of the Acqua Acetosa, and many others described in the numerous works on that ancient city. Sir Henry Wotton describes, in his Elements of Architecture, a fountain by Michaelangelo, in the figure of a sturdy woman wringing a bundle of clothes, from whence the water issues that supplies the basin.

FOUQUE, HENRY AUGUSTUS, baron de la Motte, a distinguished Prussian general in the seven years' war, born in 1698, was descended from an old Norman family, which had fled, on account of religious persecutions, to the Hague. Fouqué possessed the confidence of Frederic the Great; and the Mémoires du Baron de la Motte Fouqué (2 vols., Berlin, 1788, by Buttner, the secretary of Fouqué), which contain his correspondence with Frederic the Great, are therefore highly interesting. His nephew has written his life (1825). The most celebrated of all General Fouqué died May 2, 1774. The modern German writer, the Baron de la Motte Fouqué, is nephew to this general.

FOUQUIER-TINVILLE, ANTHONY QUENTIN, notorious for his ferocious cruelty in the first French revolution, was born at Héronnèles, near St Quentin, in 1747. His excesses obliged him to sell the place of a procureur au Châtelet (attorney in the court of this name), which he had purchased, and to declare himself insolvent. As a member of the revolutionary tribunal, he distinguished himself by his ac
\[...\]
palliation as those of Robespierre, who considered the extermination of the aristocracy as a necessary evil.

FOURCROY, ANTHONY FRANCIS DE, a celebrated French chemist and natural philosopher, was a native of Paris, and educated at the college of Harcourt. In his youth, he was fond of music and poetry; his parents, however, induced him to enter into an attempt to become a physician, but the ill-success of one of his friends deterred him. Having adopted the profession of medicine, he applied himself closely to the study of the sciences connected with it, and especially to chemistry. He published, in 1776, a translation of Rammazzini's treatise on the diseases of physicians. In 1787, he took the degree of M. D.; in 1784, he was made professor of chemistry, at the Jardin du Roi; and the next year he was chosen a member of the academy of sciences. At this period, he became associated with Lavoisier, Gay-Lussac, and Berthollet, in the researches which led to the vast improvements and discoveries in chemistry, which have immortalized their names; and, in conjunction with those gentlemen, he drew up the Méthode de Nomenclature Chimique, Paris, 1787, 8vo. He distinguished himself by the discovery of unknown bodies than by the systematic examination of science, and by popular expositions in his lectures and publications. When the revolution took place, he engaged in politics, and was chosen a deputy from Paris to the national convention. He did not, however, take his seat in that assembly till after the fall of Robespierre. By his means, a plan for a uniform system of weights and measures was adopted. In September, 1794, he became a member of the committee of public safety. His attention in this post was chiefly directed to the formation of public schools, and the establishment of institutions for the education of youth. He organized the central library of public works, out of which the polytechnic school afterwards sprang, and co-operated in the establishment of the normal schools. In September, 1795, he passed into the council of ancients, and was nominated professor of chemistry, and a member of the national institute. He vacated his seat in the council in May, 1797, and in December, 1799, Bonaparte gave him a place in the council of state, in the section of the interior, in which place he drew up a plan for a system of public instruction, which, with some alteration, was adopted. He died December 16, 1809, aged 55. His works are numerous, but the following are the most important: Leçons Élémentaires d'Histoire Naturelle et de Chimie, 5 vols. 8vo; Système des Connaissances Chimiques, et de leurs Applications aux Phénomènes de la Nature et de l'Art, 5 vols. 4to; Philosophie Chimique, 8vo; all which have been translated into English; and La Médiciné écrite par les Sciences Physiques, 4 vols. 8vo. He also published many papers in the Mémoires of the Academy of Sciences, and in the annals of Chemistry.

FOURTEENTH, in music; the octave, or replicate of the seventh; a distance comprehending thirteen diatonic intervals.

FOURTH, in music; a distance comprising three diatonic intervals, or two tones and a half.

FOX. This well-known animal is a native of almost every quarter of the globe, and has been esteemed the most sagacious and beneficial of all beasts of prey. The former quality he demonstrates in his mode of providing himself an asylum, and the latter in his schemes for catching his prey. The fox belongs to the genus canis of naturalists, and has been formed into a sub-genus, on account of its longer and more slender jaws and powerful canines. The pupils, less slanting superior incisive teeth, feint odour, and habit of burrowing. All the species are equally wily and voracious, greedily devouring birds and small quadrupeds, disliked and betrayed by most of those animals who have a dread of his attacks, and extremely difficult to be tamed, even when caught very young. The fox, like the wolf, is the constant object of persecution, from the ravages he commits, not only on domestic fowls, but on the game of the chase. He has been the destroyer of grapes from the earliest records. He devours honey, sucks eggs, carries off poultry, and, in fact, commits mischief in every possible form.

The common fox of Europe (C. lupus) exhibits a great degree of cunning in digging young rabbits out of their burrows. He does not enter the hole, as, in such case, he would be obliged to dig several feet along the ground under the surface; but he follows their scent above, till he comes to the end where they lie, and then, scratching up the earth, descends immediately upon, and devours them. The den of this fox is so contrived as to afford the best possible security to the inhabitant, being situated under hard ground, the roots of trees, &c., and furnished with proper outlets for the purpose of escape, if necessary. He is one of those animals that are made the objects of diversion by the rich. When once engaged, he never pursues, he usually makes for his hole, and, penetrating to the bottom, lies quiet till a terrier is sent in to him. If his den is under a rock or the roots of trees, which is often the case, he is safe, for the terrier is no match for him there, and he cannot be dug out. When, as is generally practised, the retreat to his den is cut off, his stratagems and shifts to escape are various. He always seeks the most woody parts of the country, and prefers such paths as are most embossed by thorns and briers. He runs in a direct line before the hounds, and at no great distance from them. When overtaken, but fights very desperately. He possesses astonishing acuteness of smell. During winter he makes a continual yelping, but in summer he is usually silent. In Japan, the natives believe him to be animated by the devil; and their writings are full of strange accounts respecting him.

Arctic fox (C. lagopus). This is smaller than the common fox, with a sharp nose, and short, rounded ears, almost hid in its fur; its hair is long, soft, and somewhat woolly. Its legs are short, having the toes covered with fur, like those of the hare; hence its specific name. It inhabits the countries bordering on the Arctic, and in October and November, like the common fox, it is the most sleek, and has the best coat of hair, which, later in the season, becomes too thick and ragged. As the winter commences, it grows perfectly white, changing colour last on the ridge of the back and tip of the tail. In April and May, it begins to shed its coat. In June, it drops its curls, from three to five in a litter. This fox preys upon various small quadrupeds, such as hares, marmots, &c., as well as upon partridges and other birds, the carcases of fish left on shore; and, driven by necessity, it will eat indiscriminately whatever may promise to allay its hunger. We are informed by Mr. Crantz, that it exerts an extraordinary degree of cunning in taking fish. It goes into the water, and makes a splash with its feet in order to attract them, and, when they come up, immediately seizes them. It is taken with great facility in traps, and in a singular situation, that the fox is only on one prey, will prey on each other, when they find individuals killed, wounded, or caught, as readily as upon any other food. Their skins are not of any great value.

Black fox (C. argenteus). This species is strikingly similar to the common fox, but is less distinguishable by its copious and beautiful fur, which is of a rich and shining black colour, having a small quantity
of white mixed with it in different proportions. It inhabits the northern part of Asia and America; but a comparison of those of this country with the foreign, will, in all probability, prove them to be distinct, as having been suggested by F. Carpenter.

Red fox (C. fulvus). This species is found throughout North America, and has been considered as identical with the common fox of Europe, though there can be no doubt of their difference. The general colour of this fox, in summer, is bright ferruginous on the head, back, and sides. Beneath the chin it is white, whilst the throat and neck are of a coppery gray. The under parts of the body towards the tail are very pale red. It is about two feet long and eighteen inches high. The skins are much sought for, and are employed in various manufactures. When caught young, they may be domesticated to a certain degree, but are always unpleasant from the fetor of their urine.

Crossed fox (C. decussatus). This differs very much from the common fox. The colour of his fur is a sort of gray, resulting from the mixture of black and white hair. He has a black cross on his shoulders, and designates his species. The muzzle, lower parts of the body and the feet are black; the tail is terminated with white. It inhabits the northern parts of America, and may, perhaps, be only a variety of the black fox.

Gray fox (C. cinereus-argentatus) is common throughout the northern parts of America, more particularly in the neighbourhood of habitations. Its general colour is gray, becoming gradually darker from the shoulders to the hips. It has a sharp head, marked by a blackish-gray triangle, which gives it a peculiar physiognomy. The tail is thick and bushy.

Swift fox (C. velox, Say). This beautiful little animal, which was first accurately described by Mr. Say, inhabits the great plains which lie at the base of the Rocky Mountains. It is much smaller than the other American species, and forms its habitation by burrowing. It is distinguished by its extraordinary speed, which appears to surpass that of any other animal. It can pass the swiftest antelope, and seems rather to fly than touch the ground in its course. It is even stated, that such is its rapid motion, that the effect produced on the eye is that of a line swiftly drawn along the surface, the parts of the animal's body being wholly undistinguishable. Its body is slender, and the tail rather long, cylindrical, and stiff. Its blackish hair is fine, dense, and soft. It somewhat resembles the C. corone, which inhabits the vast plains of Tartary.

FOX, George, the founder of the society of Friends, or Quakers, was born at Drayton, in Leicestershire, in 1624. His father, who was a weaver, educated him religiously. Being apprenticed to a grazier, he was much employed in the keeping of sheep; and it is thought that so solitary an employment confirmed that tendency to enthusiasm which he displayed from his infancy. At the age of nineteen, he persuaded himself that he had received a divine command to forsake everything else, and devote himself to his religion. He accordingly forsook his relations, equipped himself in a leathern doublet, and wandered from place to place, supporting himself as he could. Being discovered in the metropolis, his friends induced him to return; he, however, remained with them a very short time, resuming a life of itinerancy, in which he fasted much, wandered abroad in retired places, studying the Bible, and sometimes sat in a hollow tree for a day together. In 1648, he began to propagate his opinions, and commenced public preacher at Manchester; where he soon after made excursions through the neighbouring counties, where he preached to the people in the market-places. About this time, he began to adopt the peculiar language and manners of Quakers, and experienced some of the persecutions to which all active novices, in the way of religious opinion, was in those days exposed. At Derby, the following are recorded as the first elements in consequence of their trembling mode of delivery, and calls on the magistracy to tremble before the Lord. In 1655, he was sent a prisoner to Cromwell, who, having ascertained the pacific tendency of his doctrines, had him set at liberty. He was, however, treated with great severity by the clergy magistracy, in consequence of his interruption of ministers during divine service, and exclamations in the churches, and was more than once obliged to the interference of the protector for his freedom. On the occasion of a fast appointed on account of the persecution of the Protestants abroad, he addressed a paper to the heads and governors of the nation, in which he forcibly described the inconsistency of similar severity at home. In 1666, he was liberated from prison by order of Charles II., and immediately set about forming the people, who had followed his doctrines, into a church. He was not, however, permitted to marry the widow of judge Fell, in the same manner as distinguished the marriages of his followers, and soon after went to America, where he remained two years, which he employed in making proselytes. On his return, he was thrown into Worcester jail, but was quickly released, and went to Holland. He soon after returned, and was cast in a suit for tithes, which he deemed it unlawful to pay; and, in 1684, again visited the continent, where he did not long remain; and, his health becoming impaired by incessant toil, imprisonment, and suffering, he lived more retired until his death, in 1700, in the sixty-sixth year of his age. Exclusive of a few separate pieces, the writings of Fox are collected into three vols. folio; the first of which contains his Journal, the second his Epistles, and the third his Doctrinal Pieces. He was undoubtedly a man of strong natural parts; and William Penn speaks in high terms of his meekness, humility, and temperance.

FOX, John; an English church historian, was born at Boston, in Lincolnshire, in 1517. At the age of sixteen, he was entered at Brazen-nose college, Oxford, and, in 1543, was elected a fellow of Magdalen college, in the same university. Applying himself with industry and sobriety, he secretly became a convert to the principles of the reform. This tendency being at length suspected, a charge of heresy followed, and, by the judgment of his college, he was, in 1546, expelled. In the reign of Edward VI., he was restored to his fellowship; but, in the reign of Mary, understanding that Gardiner was devising means to seize him, he went abroad, and gained a livelihood by correcting the press for an eminent printer at Basle, where he laid the first plan of his Acts and Monuments of the Church. On the accession of Elizabeth, he returned to his native country, and was received in the most friendly manner. When Gardiner, the duke of Norfolk, who maintained him as long as he lived, and settled a pension on him at his death. Secretary Cecil also obtained for him a prebend in the church of Salisbury; and he might have received much higher preferment if he would have subscribed to the articles. Having been made a prebendary and dean of York, the duke of Norfolk, who maintained him as long as he lived, and settled a pension on him at his death. Secretary Cecil also obtained for him a prebend in the church of Salisbury; and he might have received much higher preferment if he would have subscribed to the articles. Having been made a prebendary and dean of York, he died, greatly esteemed and lamented, in 1557, in his seventeenth year. His principal work is the History...
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of the Acts and Monuments of the Church, commonly
called Fox's Book of Martyrs, first printed in 1553,
in one vol., folio; reprinted in 1682 and 1641, in
two volumes. In 1884, it had reached the ninth
edition.

FOX, CHARLES JAMES. This eminent statesman
was the second son of Henry, first lord Holland, so
long the rival and opponent of the earl of Chatham.
Charles James was born, January 13, 1748, and early
became a favorite with his father, who, perceiving
indications of great capacity, mingled exceeding in-
dulgence with the most careful attention to his ed-
ication. He was sent to Eton, whence he removed to
Hertford college, Oxford, and his classical require-
ments were very considerable. His father procured
him a seat for the borough of Midhurst, in 1768, be-
fore he was of legal age, and, in 1770, the same in-
terest procured him the office of one of the lords of
the admiralty, which situation he resigned the next
year, and was appointed a commissioner of the trea-
sury. Acting at this period under the influence of
his father's wishes, and with little anticipa-
tion of his future career. He spoke and voted
against Wilkes, but warmly supported Sir William
Meredith's bill to give relief from subscription to
the thirty-nine articles, and, in several other respects,
asserted his independence.

After passing a session of administration for six
years, Mr Fox was ejected, and was thrown into the
ranks of opposition. The adoption of the disastrous
measures which terminated in the independence of
the American colonies, enabled him to take this part
without opposing any of the policy which he had
previously supported. During the whole of this
eventful contest, he spoke and voted in direct oppo-
sition to the ministerial system, and, in conjunction
with Burke, Barré, Dunning, and other eminent
leaders, displayed the highest talents both as a
statesman and orator. In 1780, he became a can-
didate for the representation of the city of Westmin-
ster, and succeeded, although opposed by the whole
influence of the crown. On the final defeat of the
weak and calamitous administration of lord North,
and the accession of that of the marquis of Rocking-
ham, Mr Fox obtained the office of secretary of state
for foreign affairs. But the death of the marquis of
Rockingham left no successor, and, on the death of
Shelburne becoming first lord of the trea-
sury, in preference to the duke of Portland, Mr Fox
retired in disgust; and, soon after, a union took
place between his friends and those of lord North,
which, under the name of the coalition, was odious
to the great mass of the people. The temporary
success of this party movement served only to render
popular disgust the more general; and when, on
occasion of the famous India bill, the dissatisfaction
of the sovereign became apparent, the dismissal
of the coalition excited general satisfaction. At the
ending of the session, nearly seventy of his friends lost
their seats, and he had himself to enter into a strong
and expensive contest for the representation of West-
minster. Still, although in the new parliament Mr
Pitt had a decided majority, Mr Fox headed a very
strong opposition, and political questions were for
some years contested with a display of talent on both
sides, which the house of commons had seldom
previously exhibited.

In 1788, Mr Fox repaired to the continent, and
was proceeding to Italy, when he was recalled by
the king's illness, and the necessity of constituting a re-
generate ministry. He took the unreserved right of
the apparent, which he warmly espoused, was
marked by a great display of oratorical and logical
talent on the part of the opposition; but, both in
and out of parliament the majority on this occasion
was with Mr Pitt. In 1790 and 1791, Mr Fox
regained a share of popularity by his opposition to
war with Spain and Russia, and also by his libel bill,
regulating the rights of juries for try the persons
and rendering them judges both of the law and the fact.
On the breaking out of the French revolution, he was
disposed to regard it as likely to prove extremely
beneficial. The contrary views of Mr Burke, and the
extraordinary manner in which that warm politician
on that account publicly renounced his friendship, is
one of the most striking incidents in parliamentary
history. The policy of the war that followed belongs
to history. Mr Fox firmly opposed the principle on
which it commenced, and strenuously argued for
peace on every occasion; and, at the treaty of
Amiens, in 1801, gave Mr Addington, who con-
cluded it, his support. When hostilities were re-
newed, he also doubted of their necessity; but, on
becoming secretary of state for foreign affairs, in
conjunction with the Grenville party, he acquiesced
in its propriety. His political career was now, how-
ever, drawing to a close, and showed that he had
rapidly to decline; symptoms of dropsy appeared;
and, in a few months after the death of Mr Pitt, his
great rival, was laid in an almost contiguous grave.
Mr Fox died, September 15, 1806, without pain, and
almost without a struggle, in the fifty-eighth year of
his age.

The opinions formed of this eminent leader as a
practical and theoretical statesman, it is unnecessary
to say, have been as various as the shades of party
difference. That he was a sincere friend to all the
broad and generous principles, on the due develop-
ment of which rest the freedom and best interests of
mankind, is not to be doubted, and that they were
acceptable to great latitude on the subject of party and
political expediency, is equally clear. As a powerful
and purely argumentative orator he was of the very first
class; although, as to eloquence and brilliancy, he,
perhaps, yielded to Pitt, Burke, and Sheridan; nor
was his voice and manner prepossessing, although
highly forcible. Of his amiability in private life, all
acquaintance allow for a dissipated youth, all accounts agree.
Friends and foes equally testify to his ingenuous
and benign character. The result of this happy temper-
ament was, that no man was ever more idolised by a
wide and extensive circle of friends. An author, be-
side some Latin poetry, and a Greek dialogue, by
which he highly distinguished himself at Eton, and a
few numbers of a paper entitled The Englishman, he
published nothing during his lifetime but A Letter to
the Electors of Westminster, 1793, which was read
with great avidity. To his nephew, lord Holland,
the world is indebted for his posthumous publication,
titled The History of the early Part of the Reign of
James II., with an introductory chapter, which
was intended to form a commencement of the his-
tory of the revolution of 1688. It is written with
unpretending simplicity, and shows, that had he ear-
lier applied his talents in this direction, he would
have proved a sound and philosophical historian.

FOXGLOVE. See Digitalis.

FOX INDIANS; in North America, on the
Mississippi and Wisconsin; number, about 1750.
These Indians possess very rich lead mines on the
west bank of the Mississippi. The principal mines are
situated in a tract one league square. The ore
yields the same per cent. of metal as that of
Missouri.

FOX ISLANDS, the name given to two of the Alcu-
adian islands, which form a long and numerous group
extending westward to Kasatapkha. They are the
most important and populous of the group, and, with
the rest, are claimed by Russia. The following re-
prent the dress of a native —
FOX RIVER; a river in the North-Western Territory, United States, which flows easterly, passes through lakes Pushaway and Winnebago, and runs into the south end of Green bay, at fort Howard. It is connected with the Ouissouin by a portage of one and a half miles. The portage is over a low prairie, which is sometimes overflowed, and passable with boats. Though there are some obstructions for about twenty miles above the mouth, yet boats ascend throughout to the portage, 180 miles. The river is 400 yards wide at its mouth.

FOY, MAXIMILIAN SEBASTIAN, a distinguished French general and orator, was born at Ham, Feb. 3, 1775, and was educated in the military school la Fère. In 1791, he joined the volunteers who hastened to defend the frontiers of their country. In 1792, he served in the artillery in the army of the North, under the command of Dumouriez, and afterwards under Dampierre, Custine, Houchard, Jourdan, and Pichegru, and was wounded in the battle of Jemappé. In 1794, the infamous Joseph Lebon, commissioner of the convention, caused him to be arrested, because FoY openly censured his excesses; the 9th Thermidor, however, saved his life. In the campaigns of 1795, 1796, and 1797, he served in the army of the Rhine and Moselle, distinguished himself particularly, in 1797, at the second passage of the Rhine, near Diersheim, and became the personal friend of Moreau—a circumstance which for some time operated unfavourably on his advancement. Towards the end of 1798, he served in Switzerland, under general Schauenburg, and in 1799, in the army of the Danube, under Massena, where he assisted materially in the passage of the Limmath. In 1800, he was adjutant-general in the division of Moncey, in the army of the Rhine which marched through Switzerland into Italy, and commanded the vanguard of the army of Italy, in the campaign of 1801, during which he defeated the enemy at the entrance of the Tyrol. On the renewal of hostilities with Britain, in 1803, he received the command of the floating batteries intended for the defence of the coasts of the channel. In 1805, he commanded the artillery of the second division, in the Austrian campaign. In 1807, Napoleon sent him to Turkey, at the head of 1200 artillers, to assist sultan Selim against the Russians and British; but, in consequence of the insurrection, in which Selim was dethroned, that corps returned to France. Colonel FoY, however, remained in Constantinople, and assisted, under the direction of the French ambassador, general Sebastiani, the present (1830) minister of marine, in making preparations for the defence of the Turkish capital and the Dardanelles. These were so effective, that Duckworth, the British admiral, who approached the capital, was obliged to retire. From 1808 to 1812, FoY was general of division of the army in Portugal. July 21, 1812, after the defeat of the French at Salamanka, he succeeded Marmont, as commander-in-chief, and conducted the retreat to the Duero. After Wellington had been obliged to raise the siege of Burgos, Oct. 21, 1812, general FoY advanced at the head of the right wing of the army of Portugal, and effected the passage of the Duero near Torodesillas, October 29. After the defeat of King Joseph and Jourdan at Vitoria, June 21, 1813, he collected 20,000 men at Bergara, bent back the left wing of the Spanish army, and defended every inch of ground, so that general Graham succeeded in carrying his position at Tolosa only after a most sanguinary contest. General FoY, after reinforcing the garrison of St Sebastian, retreated across the Bidassou without loss. In the battles at Pamplona and Piy-Pied-de-Port, he commanded the left wing; and was present in all the battles in the Pyrenees, until he was dangerously wounded, Feb. 27, 1814. In 1814 and 1815, he was division-inspector of infantry. In the campaign of 1815, he commanded a part of the field of Waterloo, and was wounded for the 15th time. In 1819, he was appointed division-inspector of infantry, and the same year was elected deputy by the department of the Aisne.

A soldier, educated in the field, and covered with honourable scars, he now at once distinguished himself as an orator, and became the favourite of the nation. He always voted with the left side (the liberals), and proved himself the firm advocate of constitutional liberty. The knowledge of political economy, which he displayed both in regard to the civil and military administration, was of a high order. He distinguished himself particularly in the debates on the old laws of election, and those respecting the conscription, the war against Spain in 1823, and in all the debates on the guarantees of civil liberty. General FoY died Nov. 28, 1825. A subscription was opened for the erection of a monument to his memory, and for the support of his family, which had become destitute, and within three months 900,000 francs were subscribed. Madame FoY has published, from her husband's papers, a History of the Peninsular War, 4 vols. 8vo. (translated into English). His Discours have also been published since his death. (Discours du Général FoY, précédé d'une Notice biographique, par M. P. F. Tissot; d'un Éloge par M. Etienne, et d'un Essai sur l'Éloquence Politique en France, par M. Jay, Paris, 1826, 2 vols. 8vo), in which the reader will find an account of the affecting scenes which occurred at the funeral of general FoY. FRA.; an Italian prefix, derived from the word fraté, brother, and used before the names of monks; for instance, Fra-Giovanni, brother John. Some monks have become famous under such names, as Fra-Bartolomeo the painter, and Fra-Paolo, the celebrated Venetian monk.

FRACASTORIUS, JEROME; an ingenious poet of the sixteenth century, was born at Verona, in Italy. It is said that he came into the world without a mouth, having in the place of it a small aperture, which was enlarged by a surgical operation. One day, when his mother was carrying him in her arms, and walking in a garden, she was scorched by lightning, and FoY was unjured. He was patronized by cardinal Beemo, to whom he addressed the most celebrated of his works, a Latin poem entitled Syphilis. In the latter part of his life, he wrote a poem on the adventures of the patriarch Joseph; but his poetic fire seems then to have been exhausted, and
the virtues of the hero were less happily celebrated than the horrors of the disease. He died at Padua, of apoplexy, in 1553, aged seventy-one. Among the moderns who have exercised their talents in the composition of Latin and French poems, the best and most highly appreciated are those of Regiomontanus. The elder Scaliger ranks him, as a poet, next to Virgil; and his merit has been generally acknowledged. Besides the poems already noticed, he wrote another, entitled Aleon, sive de Curia Caenum venaticorum. Among his prose works on professional topics, are treatises De Sympathet et Antipathet; De Contusion et Morbis contagiosis, &c.

FRACTION (from the Latin frangere, to break) signifies, in arithmetic and algebra, a combination of numbers representing one or more parts of a unit or integer; thus four-fifths is a fraction, formed by dividing a unit into five equal parts, and taking one part four times. Fractions are divided into vulgar and decimal. Vulgar fractions are expressed by two numbers with a line between them. The lower, the denominator, indicates how many equal parts the unit is divided; and the number above the line called the numerator, indicates how many of such parts are taken; as, in \( \frac{1}{5} \), is the denominator, 7 the numerator. Vulgar fractions have been divided, though not very accurately, into proper, improper, simple, compound, and mixed, viz.:—A proper fraction is when the numerator is less than the denominator, as \( \frac{1}{3}, \frac{1}{4} \); \( \frac{1}{5} \), &c. An improper fraction is when the numerator is equal to or greater than the denominator, as \( \frac{11}{4}, \frac{12}{5} \), &c. A simple fraction is that which consists of a single numerator and single denominator; and is either proper or improper, as \( \frac{1}{5}, \frac{2}{3} \), &c. A compound fraction is a fraction consisting of two or more simple fractions; thus \( \frac{1}{3}, \frac{1}{5} \), &c., are compound fractions. A complex fraction is that whose numerator and denominator are both fractions; thus \( \frac{\frac{1}{3}}{\frac{1}{5}} \) is a complex fraction. These two distinctions, though frequently made by authors on arithmetic, are certainly improper, the former indicating an operation in multiplication, and the latter an operation in division. It is, therefore, improper to apply to them the denomination of fractions. An integer and fraction together is called a mixed number; that is, \( 7 \frac{1}{3} \), &c., are mixed numbers. The theory of vulgar fractions is one of the most important in algebra, but is rarely, we think, developed in a clear, simple, and easy manner, as in books on arithmetic. A correct understanding of them is of great importance for the proper prosecution of arithmetical and mathematical studies.

Decimals fractions include every fraction, the denominator of which is ten or a power of 10: as \( \frac{1}{10}, \frac{1}{100}, \frac{1}{1000}, \) &c. Our beautiful system of writing numbers enables us to write decimal fractions without expressing the denominators, just as we are enabled to write whole numbers without saying whether they are units, hundreds, &c. The following scheme will explain it.

<table>
<thead>
<tr>
<th>Fractional Parts</th>
<th>Decimal Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hundredths ( \frac{1}{100} )</td>
<td>0.01</td>
</tr>
<tr>
<td>Tenths ( \frac{1}{10} )</td>
<td>0.1</td>
</tr>
<tr>
<td>Units (1)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

On the left of the point are the whole numbers; and just as every place in that series in proceeding to the left increases in value ten times, so every place to the right from the point decreases in value ten times. Writing decimal fractions is therefore only an extension of the same idea for other numbers. Yet, though it is as simple as it is important, the system was unknown to the ancients, and was first discovered by the German mathematician Regiomontanus in 1464. All calculations in decimal fractions are very easy and simple.

FRACTION (from frango, to break) is applied to the bones, and often divided into simple and compound; simple, when the bone only is injured; compound, when the soft coverings are so injured that either one of the fractured ends protrudes through the skin, or the skin and muscles are so lacerated as to expose the bone. The long cylindrical bones of the limbs are most frequently fractured; next the flat, particularly of the cranium (for those of the pelvis and scapula must be excluded); and, lastly, the round, irregularly-shaped bones of the tarsus, carpus, and vertebrae. The bones are fractured by external violence, disease, and the action of the muscles. The long cylindrical bones are not unfrequently broken in more than one place; they are generally fractured at the centre of their shafts, in which case the fracture is more or less oblique; whereas, when it occurs near the extremes, it becomes more and more transverse; hence fractures have been divided into oblique and transverse. The spongy bones are also fractured transversely; the flat bones in various parts, occasionally stellated. A comminuted fracture occurs when a bone is broken in different places at once, and divided into several fragments or splinters. Longitudinal fractures also occur to the long cylindrical bones. Complicated fractures are those accompanied with luxation, severe contusions, wound-ed blood-vessels, pregnancy, gout, scurvy, rickets, fragilitas ossium, and syphilis, which diseases prevent the union of the bones, and also cause them to be very easily broken. Cold renders the bones more fragile; and they are also more brittle in old age. The superficial are more exposed to fracture than the deep-seated bones; thus the clavicle is more so than the os innominatum. Others, from their functions, are more exposed; as, for example, the radius, from its affording support to the carpus. When a fracture takes place, there is an effusion of blood from the vessels of the bone, periosteum, and contiguous soft parts; the muscles are violently excited; the periosteum and truncated ends of the bone inflame; and, after the inflammation subsides, the vessels of the periosteum and ends of the bone secrete callus, which is an effusion of gelatin that is gradually converted into cartilage, and, lastly, into bone, by the secretion of the inanimate of lime, precisely in the same manner as the formation and conversion of bone in the fetus. During the inflammatory action, no diseased secretion takes place; nay, even the healthy natural ones are more or less suspended, so that no advantage is gained by setting a fracture immediately after the injury; on the contrary, this primary setting, as it is termed, re-excites the already spasmodic action of the muscles, and, in nine cases out of ten, disappoints the hopes of the surgeon. Callus does not harden for many days: in the adult, it begins generally about the tenth or twelfth day; Boyer, however, says that it is not formed until between the twelfth and seventeenth day. The treatment of a simple fractured bone is, to lay the limb in the easiest position for the patient; to apply leeches and moodine fomentations, or poultices; to put him on low diet, enjoin perfect rest, and administer gentle laxatives, until all inflammatory action is subdued; then to extend the limb to its natural length, or apply paste-board splints dipped in warm water, with wooden ones exterior to them, and fastened with tapes. This latter is termed secondary setting, and is applicable to all the bones of the extremities.

FRANCE; a country of Europe, situated between lat. 42° 20' and 51° 5' N., and lon. 3° 51' E. and 9° 27' W., comprising an extent of 213,800 square miles, with a population, according to official returns, in 1897, of 34,531,545. It is bordered on the north-east by Prussia and Bavaria, on the south by Spain, and touches Switzerland and Sardinia; on the south, its boundaries are the Mediterranean, the Pyrenees, and the Bidasoa; the ocean bounds the rest. The island of Corsica, and the Hinterland of the Mediterranean, and the isles of Oleron, Re, Noirmoutier, Belle-Ile, Dieu and Ouessant (Ushant), in the Atlantic, belong to France. The foreign possessions are of little value. They are, in Asia, Pondicherry and Karikal on the Coromandel coast, Yannan in the northern Circars, Chandernagor in Beagal, Mahé on the Malabar coast, a factory at Surat, and some factories in Arabia, in all 179,000 inhabitants; in Africa, Senegal, Goree, the isle of Bourbon, and some factories, containing 99,000 inhabitants; also Algeriers recently acquired; in America, Martinique and Guadeloupe with its dependencies, Guiana, and the isles of St. Pierre, and the St. Pierre, near Newfoundland, containing 225,000 inhabitants.

In this article, we shall slightly deviate from our usual arrangement in treating of countries, and give a short view of the geography and statistics of France before entering upon its history. The latter section is so intimately interwoven with the political and social relations of the country, that, to prevent any interruption in our view of these, we think it better in this instance to dispose first of the statistical details. The Index at the end of the article will prevent the reader from falling into confusion.

The territory of France is divided into eighty-six departments (q. v.), which generally derive their names from the rivers. They are subdivided into 3,633 arrondissements, 2,844 cantons, and 38,339 communes. Each department is governed by a prefect, and each arrondissement by a subprefect. The cantons have no administrative powers. The communes are under the superintendence of three officers, with the counsellors of departments, arrondissements, and communes, were, before the recent changes, appointed by the king. The empire under Napoleon comprised about 300,000 square miles, with 22,500,000 inhabitants, of which 28,000,000 were French, and the rest composed of Flanders, of 1,800,000 Flemish, and Dutch, and 4,000,000 German. The principal mountains of France are, 1. The Vosges on the north-east. They are of a rounded outline, with gentle slopes, and afford much open pasturage. The highest summit is not more than 4,500 feet high. 2. The Jura mountains lie to the south of these, and their summits rise to the height of 6,000 feet. 3. Many Alpine branches intersect Dauphiny and Provence. (See Alps.) In the centre of the kingdom are, 4. The mountains of Auvergne, of volcanic origin, of which the Puy de Dome, the Monts d'Or and the Cantal are the principal groups. 5. The Cevennes lie to the south-east of the range last mentioned. Their highest summit is Mont Lézère (6,510 feet). 6. The Pyrenees form the principal part of the boundary between France and Spain. (See Pyrenees.) These mountains divide the country into four great basins, the form and exposure of which have a great influence on their climate and productions. The narrow valley of the Rhone runs from north to south; while the open basins of the Seine, the Loire and the Garonne stretch in a north-western direction. The Adour rises in the Pyrenees, and washes the walls of Bayonne. The other rivers are principally tributaries. The Marne and the Oise fall into the Seine; the Allier, the Loire, the Sarthe, and the Mayenne, into the Loire; the Rhone receipts the Saone, the Isère, the Durance, the Ain, and the Sorgue; the Tarn and the Dordogne join the Garonne. The numerous branches of these rivers are joined by canals (see Canals), which form an extensive internal water communication.

Agriculture.—In respect to soil, the richest part of France is the north-west division, comprehending the provinces of Flanders, Artois, Picardy, Normandy, and the Isle of France, where there is a deep, rich loam; about 18,179,690 acres in extent. The valley of the Garonne is composed of a friable, sandy loam, with a calcareous mixture, and moisture sufficient for every purpose. This district contains 7,654,561 acres. The great valley of Languedoc is extremely prolific, though the soil is not so fine as that of the preceding districts. The Limagne, a valley of Auvergne, is considered to have one of the finest soils in the world. It consists of beds of earth, said to be twenty feet deep, formed from the decomposition of soft basalt. The calcareous and chalk formations are extensive. The chalk provinces are unhealthy in grain, but the general influence of the sun allows them other riches. The calcareous loam on the borders of the chalk formation is more productive. In Bretagne, Anjou, and Maine, are immense heaths. The landes are extensive tracts of sandy deserts, producing nothing but broom, heath, and junipers. The most extensive are the landes of Bourdeaux, twenty leagues in length by twelve in breadth. In the remaining provinces, gravel, or a gravelly sand, is the predominating soil. The woods and forests are estimated to cover a space of 18,795,000 acres. The principal are those of Ardennes, of Morvan, and Fontainebleau. The northern and western coasts are formed in a great proportion by immense downs or sand banks, and, where the shores are formed by cliffs, they are seldom bold enough to be approached with safety. The harbours are therefore few. On the Mediterranean, the coast of Languedoc is very dangerous; but the Provence harbours are good harbours. The culture, throughout the northern half of the kingdom, consists of wheat, barley, oats, pulse, and of late, much more than formerly, of potatoes; in the southern half, corn (particularly maize), vines, mulberries, and olives. The eastern parts, being more elevated than the western, have more rigorous winters, and more ardent summers. Coal and iron are found in abundance. The most common fuel is wood. The superficial extent of France has been recently estimated by baron Dupin at 53,533,426 hectares, or 132,694,000 English acres, which are distributed in the following manner:—

<table>
<thead>
<tr>
<th>Description</th>
<th>Hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable land</td>
<td>22,819,000</td>
</tr>
<tr>
<td>Vineyards</td>
<td>1,977,000</td>
</tr>
<tr>
<td>Kitchen gardens</td>
<td>329,000</td>
</tr>
<tr>
<td>Gardens and orchards</td>
<td>687,000</td>
</tr>
<tr>
<td>Miscellaneous culture</td>
<td>789,000</td>
</tr>
<tr>
<td>Olives</td>
<td>43,000</td>
</tr>
<tr>
<td>Hops</td>
<td>60,000</td>
</tr>
<tr>
<td>Chestnuts</td>
<td>436,000</td>
</tr>
<tr>
<td>Parks, groves, nurseries</td>
<td>39,000</td>
</tr>
<tr>
<td>Copse wood</td>
<td>6,479,000</td>
</tr>
<tr>
<td>Olearia</td>
<td>53,000</td>
</tr>
<tr>
<td>Pasturage</td>
<td>3,253,000</td>
</tr>
<tr>
<td>Meadows</td>
<td>3,488,000</td>
</tr>
<tr>
<td>Oaths, &amp;c.</td>
<td>3,841,000</td>
</tr>
<tr>
<td>Turberies</td>
<td>7,000</td>
</tr>
<tr>
<td>Mines and quarries</td>
<td>28,000</td>
</tr>
<tr>
<td>Building stones</td>
<td>213,000</td>
</tr>
<tr>
<td>Canals</td>
<td>9,000</td>
</tr>
<tr>
<td>Ponds</td>
<td>213,000</td>
</tr>
<tr>
<td>Marshes</td>
<td>186,000</td>
</tr>
<tr>
<td>Ronda, rivers, &amp;c.</td>
<td>6,555,000</td>
</tr>
</tbody>
</table>

(unproductive)
The value of capital vested in agricultural pursuits is estimated at $37,522,061,476 francs; the gross annual produce at 4,678,786,885 francs; the export of crops at 4,678,786,885 francs; the profit of 3.4 per cent. on the capital. Previous to the revolution, the produce of the soil in France was burdened with an annual tax of nearly $229,000,000. The cultivators were chiefly métayers, or mere tenants at will, who supplied the labour while the proprietor owned the capital. The population was generally one half the produce. The cultivators also laboured under a load of degrading and vexatious restraints and feudal oppressions; thus weeding and hoeing were prohibited, lest the young partridges should be disturbed. The proprietors themselves were harassed by capitaineries, which engrossed all ministerial rights as far as game was concerned. The game consisted of droves of wild boars and herds of deer, which the farmers were not suffered to kill, wandering over the country to the destruction of the crops. Then there was the coréée, which fell very heavily. But the conversion of the estates of the church and the nobility into various domains, and the sale of these in small parcels, and on easy terms, during the revolution, enabled the tenants to become proprietors, the number of which has more than doubled since 1789. The rotation of crops is but little practised in France, where fallows still remain. Potatoes are the principal product of wheat in the best cultivated districts, and on the best soil, hardly exceeds eighteen bushels per acre; an English farmer expects twenty-five on the same extent. In 1812, the number of horses in France was 2,176,000; but, in 1819, the horses and mules together amounted only to 1,957,671; at present, the number is estimated at 2,500,000. The number of horned cattle is 6,973,000; of sheep, about 45,000,000. The total number of all kinds of poultry is about 31,600,000. The French are the best wine makers in the world. The Champagne, Burgundy, Clares, Hermitage (see the articles), are drunk all over the world. For a long time, the choicest growths were in the hands of the church; and, in the frequent changes of property which have taken place since the revolution, many vineyards have deteriorated in consequence of bad management. The vineyards of France are the best in the world. The value of the whole produce of wine and brandy is about 800,000,000 francs. The culture of the vine is supposed to have increased nearly one-fourth since the revolution, owing principally to the small proprietors, each of whom endeavours to supply his own consumption by a little patch of vineyard. M. Dupin says, that many hectares of French territory are yet uncultivated, merely for want of cattle stock and manure them; that two-thirds of the inhabitants are without animal food; that more than one-third subsist entirely on oats, buckwheat, barley, rye, chestnuts, or potatoes, and that the agriculture of France is the cause of the diminution of the prosperity of France. Two-thirds of the population is agricultural.

Manufactures and Commerce.—France possesses a soil and climate capable of furnishing her with all the raw materials of manufacture, except cotton. The manufacture of fine wool on cloths at Sedan was introduced under the auspices of Colbert. The machinery used was very defective until M. Chaptal engaged an English machinist to instruct the French artisans. Steam engines are rare; the spinning mills being worked chiefly by water or by horses. The quantity of raw wool manufactured in 1819 was 30,800,000 killograms (of about 21 lbs. each), and, in 1826, 42,000,000, with 8,000,000 of imported wool: the value of the manufactured articles was 265,000,000 francs; of the raw wool, 305,000,000; the quantity exported was about one-thirteenth of the whole quantity manufactured. By the exertions of Henry Hahn, a manufacturer of Lyons, all the southern provinces. At Tours, silk stuffs for furniture are chiefly manufactured; at Ganges and other places in the Cevennes, silk stockings. Lyons is the principal place for silk manufactures of all kinds. Paris ranks next after Lyons. In 1812, the value of the raw material among 45,000,000 francs, of which 22,000,000 were the price of imported silk. The value of manufactured goods, at the same period, was 107,560,000 francs; of which less than one-third was exported. Forty years ago, the spinning of cotton by machinery was hardly practised in France. Cotton mills have been established within that period, and the manufactures of Alsace are now superior to those of England in the brilliancy of their colours. In 1812, 10,362,000 killograms of cotton were spun by machinery, and, in 1825, 28,000,000 of greater fineness. The cambrics, gauze, and lawn of St. Quentin, Valenciennes, and Calais, are among the best of the European woolen and flaxen industry. Lace is made in great quantities. The whole produce of the linen and hemp manufactures is estimated at 200,000,000. In 1814, 100,000,000 killograms of cast-iron were produced; in 1825, 160,000,000. Gilding and watch-making are carried on, at Paris, in the production of which are worked about 38,000,000 francs each. Painting also employs a great number of persons at Paris. In 1814, the number of printed sheets was 45,675,039; in 1820, 80,921,502, and, in 1826, 144,561,094. Notwithstanding the low price of labour in France, the industries of that country cannot enter into competition with that of Britain. One of the circumstances which depress it is the want of internal communication by roads and canals. The practicable roads of France are not more than one-third of the extent of those of Britain. The cross roads are few, and the great roads are not kept in good order. The length of the canals in France is not more than one-eleventh of those of Britain. Another point, in which France is inferior, is in the use of steam engines, attributable, in part, to the deficiency of coal, or the difficulty of transporting it. The total force of steam engines in France is estimated equal to that of 480,600 men; that of Britain is equal to a power of 6,400,000 men. All the power derived from machinery of every sort, or from constructive ingenuity, and applied to purposes of industry in France, is only one-fourth of the similar power employed in Britain. The commerce of France has been very much diminished by the loss of her colonies. The value of the colonial imports, in 1788, was 227,000,000 francs; in 1824, it was only 50,000,000; the exports for 1788 amounted to 119,000,000; in 1824, to 44,000,000. The total value of exports from France, in 1824, was 440,542,000 francs; of which 129,756,000 were of productions of the country, and 277,486,000 manufactured articles. The amount exported to the United States of America was 55,000,000, being more than that to any other country. The imports for the same year were of the value of 454,561,000 francs; of which 272,873,000 francs were raw materials for manufacture, 121,987,000 natural productions for consumption, and 60,030,000 manufactured articles. Since 1824, French commerce has considerably improved.

History of France.—I. To the time of Charles the Bald. A confederacy of German tribes, having con- quered the Lombards, assumed the name of the Franks (the free). This confederacy extended from the mouth of the Lahn, down along the Rhine, and was composed of the Chauci, Sigambri, Attuarii, Bructeri,
FRANCE.

Chamavi, and Catti. After several predatory expeditions through Gaul, in which they even passed the Pyrenees, they waged bloody wars with the legions of the Roman emperors Gordion, Maximian, Posthumius, Constantius, and the Cesar Julian, in Gaul, in the island of the Batavians, and in Britain, where, together with the Saxons, they subdued the usurping Carausius. The Salians, inhabitants of the country on the Somme, were particularly distinguished. They penetrated to the Scheldt, and sustained a severe conflict with Julian. In the fourth century, they became as formidable in the west of the Roman empire as the Goths were in the east, and had already established their power in the south, and on the banks of the Somme, when Clovis the Great, of the Merovingian race, put an end to the Roman dominion in Gaul, by the victory of Soissons, in 486, over the Roman general Syagrius. This conqueror reduced the Allemanni, on both banks of the Rhine, by the battle of Zulphich (409); the Bretons in Armorica (Breogate), in 507; and the Visigoths in Aquitania (the maritime district, extending from the Garonne to the Pyrenees). He also removed his cousins, the princes of different tribes of the Franks, out of his way, by violence or treachery. He crowned himself at Rheims (496), with a crown afterwards placed on the hand of the bishop Remigius, and anointed with the miraculous oil brought by a dove from heaven.* On this account, the successors of Clovis received from the pope the title of most Christian king and eldest son of the church. The Merovingian dynasty retained the dominion of the Franks in Gaul and Germany until 751. The four sons of Clovis divided the kingdom into Austrasia and Neustria, or the Eastern and Western monarch; and the latter again into the kingdoms of Orleans, Soissons, and Paris. They conquered Thuringia and Burgundy, but the divisions of the empire—which produced bloody civil wars and family murders—the imbecility of the kings, and the invasions of the Saracens from Spain, distracted the empire. But the power of the majors domus (governors of the palace, afterwards maires du palais) still preserved the unity of the monarchy. These officers finally possessed the Merovingians of the throne, and in the person of Liutprand, Charles the Bald, Pepin the Short, and Pepin the Younger, are particularly distinguished in the history of the second or Carolingian race. Heretil made the Frisons tributary: Martel frustrated the Moors in their plans of conquest, by the victory of Tours, 732; entirely reduced the Frisons; compelled the Saxons to pay tribute, and promoted the extension of Christianity by means of St. Boniface, the apostle of the Germans, who was still more favoured by Charloman and Pepin the Younger. The feeble Childeric III. was finally compelled to exchange the purple for the monastic dress, and the major domus Pepin ascended the throne with the consent of the pope, 752. From him sprang the Carolingians, who wore the crown of France for 235 years. His son Charlemagne extended his dominions from the Elbe to the Loire, and the Rhine; from the North sea and the Eyder to the Garigliano, in Naples. On him, the master of France, Germany, and Italy, the pope, Leo III., conferred (800) the crown of the West. The governments of Constantine and Bagdad treated him with respect and friendship. But the monarchy fell to pieces under his son and successor, Louis le Debonnaire (814—840). The sons of Louis, after much bloodshed, divided the empire by the treaty of Verdun (843), which completed the separation of the German and Italian crowns from the French. Charles I., the Bald, obtained France. The history of the proper kingdom of France begins, therefore, with this treaty, in 843. (See Sismondi's Histoires des Francais.)

2. The decline of the monarchy began with Charles the Bald, who was obliged (877) to render the offices of counts and dukes hereditary. During his reign, the nobility acquired the prerogative of being summoned by the arrière bain only when the whole country was threatened by the general ene-

* A citizen of Rheims is said to have saved the fragments of the crown of Clovis, which were broken during the revolution, with some drops of the ointment it contained. These are said to have been put in the new flask used at the consecration of Charles I. as all the antiquatedSummary was to be revived on that occasion.
count of Flanders, possessed, with sovereign power, sixteen of the present departments, which now contain 5,600,000 inhabitants; 2. Thibaut, count of Champagne, seven departments, with the towns of Meaux, Châlons, Troyes, Chaumont, Chartres, and Blois. 3. the duke of Burgundy, six departments (the duchy of Burgundy and the Franche-Comté), which have at present a population of 2,000,000. 4. All Southern France belonged to several sovereign princes—the counts of Toulouse, Langres, Lyons, Provence, &c., the most important part belonging to the kingdom of England. 1. Edward IV., who possessed twenty-eight of the present departments, now containing 16,500,000 inhabitants. In this portion were Nantes, Bretagne, Gueret, Limoges, all the provinces from the mouth of the Garonne to its source, from Carcassone to Bayonne, and Boulogne in the north. All these territories were destined to be recovered, successively, by the crown. The crusades favoured this design, and, after the short administration of the abbe Suger, under Louis VI. (died 1137,) the gradual disappearance of bondage, and the rise of the free cities, prepared the way for the civil existence of the period. In 1106—1127 the number of the pares regni was limited to six ecclesiastical and six lay vasals. Louis IX., the Saint (1270), by the introduction of a new administration of justice, gave new power to the crown. Another blow to the already declining power of the nobles was the introduction of letters of nobility in the reign of Philip III. (died 1286). Still more important was the introduction, in the reign of Philip IV., le Bel (died 1314), of the third estate (tiers-état), or deputies of the cities (1301), in the general assemblies of the clergy and the nobility. (See Champ de Mars, and Champ de Philip.) With the assistance of these feudal estates, Philip IV. resisted the interdict of Boniface VIII. and the clergy. The same Philip extended the jurisdiction of the parliament of Paris over all the crown lands. But the whole kingdom was still formed of discordant materials, and the cruel extermination of the Templars (q. v., 1314), is characteristic of an age in which justice was the victim of power.

4. Military Power and Policy of Conquest in France. The Valois, the second branch of the male line of the house of Capet (1328—1589), ascended the throne with the consent of the states, in the person of Edward. Five wars were conducted by Philip IV. during this period, the wars with England kindled the spirit of revolt in the nobility, transformed the soldiers into robbers, and the suffering peasants into wild beasts. The king of England, Edward III., nephew of Philip IV. of France, made pretensions to the French throne; the Salic law, which excludes females from the throne, not having as yet been established as a fundamental law of the kingdom. While the conqueror of Crecy took Calais (1347), and compelled the captive king, John the Good, to resign Guienne and other provinces to England, by the treaty of Brestigny, 1350, France was plundered by banditti, and the Jacquerie, a mass of furious peasants (about 1358), satiated their spirit of vengeance in the blood of the nobility. Charles V., the Wise (died 1380), and his constable, the brave D'Uguesclin, were able to restore order only for a short time. Then came, under Charles VI. (died insane, 1429), the epoch of the Hundred Years' War (1337—1453). For 50 years conducted by Orleans and Burgundy, was stained by assassination, and the succession was settled on Henry V. of England, son-in-law of Charles VI. to the exclusion of the dauphin, afterwards king Charles VII. Henry V. died before Charles VI. and his son Henry VI., a minor, was acknowledged as king by the greater part of France, and crowned (1431) in Paris. At this time (1429), amidst the licentiousness of war, of factions, and of manners, a peasant girl (see Joan of Arc) animated the French in the cause of the dauphin, and the English lost all their possessions in France except Boulogne. This political change increased the extent of the crown-lands (Philip VI. for example (1349), acquired Dauphiny); and the war enabled them to raise taxes without the consent of the states. Charles VII. was the first who instituted a standing army (1444). From that time, it was the policy of the kings to extend their authority by destroying the liberties of the states, and, at the same time, to turn the warlike spirit of the nation to foreign conquests. The despotic policy of Louis XI. (1461—83), whose maxim was, Dissimulier c'est regner, obtained this object by violence and cunning. The 280 years' barrel with the house of Hapsburg, which obtained the inheritance of Burgundy on the death of Charles the Bold (1477), originated during his reign. (See Netherland.) On the contrary, his son and successor, Charles VIII. (died 1498), obtained the hand of the heiress of Burgundy, and thus accomplished the union of that duchy with France. He then conquered Switzerland, and undertook the conquest of Naples (1494), to which he made pretensions as heir of the house of Anjou. Here began the schemes of conquest which armed the kings of France against Italy, Germany, and the Netherlands, and finally produced the modern political system of Europe. Charles was the last king of the direct line of Valois; which was succeeded by the collateral branch of Valois-Orléans, 1498. The kind-hearted Louis XII. (q. v.) married Anne, heiress of Burgundy. He was a stranger to the Machiavelism of his predecessors, and the country was induced to give up a paternal domestic administration; but the ambition of conquest involved him in disadvantageous wars. He maintained the pretensions of his family to Milan, by taking possession of that duchy; he conquered the kingdom of Naples, which he divided with Ferdinand, the Catholic King of Spain; but his ally soon deprived him of his portion of the spoil; and in the war he conducted against the league formed against him by the pope, Julius II., whose confederates were Spain, Austria, England, Switzerland and Venice, he lost Milan and the supremacy of Genoa. His successor, Francis I. (1515—47), and the son of the latter, Henry II. in his turn, formed the league of Carlowitz, and concluded an ineffectual alliance with the Ottoman Porte. On the other hand, Francis I. united the duchy of Burgundy permanently with the crown, and rendered the royal power absolute; whilst the powerful vassals accepted offices at court, and even the parliament began to yield to the wishes of the king. Henry II. recovered Calais from the English (1558), and, in alliance with Maurice of Saxony, for the protection of the freedom of Germany, conquered the German bishoprics of Metz, Toul, and Veren. In the time of Francis I. (q. v.), religious persecution opposed the progress of the reformation in France. During his reign and those of his successors, Henry II. (1547—59) and Francis II. (died 1560), Calvinists were burned in France; so little had the refinement of manners and the cultivation which nourished under Francis I. softened the ferocity of fanaticism. The foundation of the national debt, the weight of which broke down the throne and the state, was thus laid in this period. Intrigue and corruption gave to women a dangerous influence at court and in public affairs. Under the administration of Charles IX. (conducted during his minority by the queen-mother, Catharine of Medicis), France was inundated with the blood of Frenchmen, shed in the religious wars from 1562.
See Brtholomei, St. The haughty Guises removed the Bourbon, princes of the blood, from court, because they were Huguenots, and finally aspired to assasinate the throne themselves. The feeble Henry III., carried by the influence of Guise to be assassinated, and his brother, the cardinal, to be murdered in prison (1568). This was the signal to the confederates at Paris, for the death of the King (1589). See Henry III. and IV.

§. France, a European Power under the Bourbons until 1789. Two hundred years before the revolution, the first Bourbon of the Capetian race, Henry V., king of Navarre, ascended the throne of France.

He restored order, embraced the Catholic religion, and placed the Calvinists under the protection of the edict of Nantes (1558). Henry, aided by counsel of the wise Sully, laboured diligently for the welfare of the state. The French now began to perceive the importance of colonial establishments; they founded the colony of Pondicherry in the East, those of Martinique, Guadaloupe, and St Domingo in the West Indies, and that of Quebec in North America. After the assassination of Henry IV. (1610), French policy was carried on by the first year's minority of Louis XIII., until the prime minister, cardinal Richelieu (q. v.), gave it a steady direction. He took advantage of the thirty years' war, to humble Austria and Spain. He created that domestic despotism in France, which rendered the government completely absolute, but finally occasioned the overthrow of the monarchy. The states-general were assembled for the last time, 1614. The policy of Richelieu was carried to perfection by Mazarin, in the reign of Louis XIV. (See Louis, and Mazarin.) The peace of Westphalia (1648) gave France Alsace, the Sun- gary, and confirmed her in possession of the bishoprics of Metz, Toul, and Verdun; the treaty of the Pyrenees (1650) with Spain united a part of the Low Countries, and the county of Roussillon, with France. After the death of Mazarin (1660), and the fall of Fouquet, superintendent of the finances (1661), Colbert (q. v.) raised France to a high degree of prosperity and refinement. He executed his splendid projects with an indefatigable activity. Louvois (q. v.) was at the head of the department of war; the generals Turenne, Luxembourg, Catonat, Boufflers, Vendome, bound victory to the banners of France; and Vauban girded the kingdom with for- tress. More than this, he became powerful enough to dic- tate to the other powers of Europe all important questions. But the revocation of the edict of Nantes (1685): his interference in foreign affairs, and particu- larly in the Spanish war of succession (1701-13), destroyed the greatness of France. The ministers and generals of Louis were dead, and his cabinet was guided by his confessor, Le Tellier, and madame de Maintenon. On the death of Louis, 1715, whom, as also Henry IV., the French call the Great, the national debt amounted to no less than 4500 million livres. He was succeeded by his great-grandson, Louis XV., aged five years. The regency of the Duke of Burgundy was followed by the administration of the infamous Dubois, the three years' ministry of Louis, duke of Bourbon, the admira- ble economy and honest policy of the venerable Fleury, the pernicious influence of the notorious marquise de Pompadour, and the activity of the

duke de Choiseul,—these are the chief features in the history of a period in which the welfare of the kingdom and the happiness of the subjects became the sport of the vilest passions. The acquisition of Lorraine, the dispersion of the Jesuits, the complete relations of France, produced by the peace of Aix-la- Chapelle (1748), and that of Paris (1763), the war on account of the election to the Polish throne (1733), the war of the Austrian succession (1740), and the war in support of Austria (1756—63), the suppres- sion of the Jesuits, the capture of the island of Guadeloupe, the constantly increasing despotism, which was principally felt in the immumer- able letters de cachet, the distinguished names of Montesquieu, Buffon, Voltaire, Rousseau, &c.—these are the subjects most worthy of notice in the reign of Louis XV., who, by all kinds of prodigality, by foolish enterprises, by his confidence in men who shamefully abused their trust, loaded the nation with oppressive taxes, and accumulated an immense mass of debt. (See the articles Louis XIV. and Louis XV.) Much good was done under his grandson and successor, Louis XVI. (1774—92; see this art.). But all this, and all the measures recommended by Necker, did, were but palliatives of an incurable disease. By her participation in the war of the American revolution (1778—83), France hastened her own catastrophe. Necker left the disinterested post of minister of finance, and Calonne, who followed him, succeeded for a time in his efforts to conceal the embarrasments of the treasury. By his advice, the notables of the kingdom were finally assembled at Versailles (Feb. 22, 1787), to the number of 146; but they refused the proposition of the minister to introduce a land-tax and stamp-duty. Calonne was dismissed, and Brienne, archbishop of Sens, succeeded him as prime minister. Brienne proposed economical reforms, with new loans and taxes, to cover the yearly deficit of 140 million livres; the personal services of the feudal tenants were commuted into pecuniary supplies, and the king held a lit de justice, to compel the parliament of Paris to register the taxes proposed by Calonne, to which the notables had refused their consent. The parliament resisted with firmness, and was exiled to Troyes. It was soon after recalled, but refused to register a loan of 440 million livres. The exile of the duke of Orleans, who was at the head of the peers, and of two members of the Chamber, and the change of the constitution, the declaration of the parliament against the abuse of the letters de cachet; upon which the king decreed the suppression of all the parliaments, and the introduc- tion of a court of justice depending on his own will (voir pléniers). This work of Brienne and Breteuil excited universal displeasure. The parliament of Rennes declared infamous whoever should accept a seat in that court. The people saw the constitution of the kingdom violated in its most vital parts, and never before spoke with such ardour and sympathy of the freedom of North America. Montesquieu, Voltaire, Diderot, D'Alembert, and Rousseau were read, and analyzed, and their bold ideas placed in contrast with the actual state of things. The real state of affairs could not remain secret to the prime minister: he therefore yielded to the wish of the nation, and proposed an assembly of the states-gene- ral: at the same time, he received his dismissal, the king considering sharply on the personal reputation of the famous Necker, who was now recalled as super- intendent of the finances and minister of state. He found in the treasury of France only 419,000 livres in cash! His first steps were the restoration of the parliaments, and the convocation of the notables anew (Nov. 5, 1789), in order to adopt measures re- lative to the organisation of the states-general. The

* See the work of Ruhlery on the causes of this event, called Recit abrégé des faits et causes, sur la Révolu- tion du R Édit de Nantes et sur l' État des Protestants en France, etc., 1788. France lost, particularly in the seven years of war (1756—63), 1690, 1715, 1724, 1744, hundreds of thousands of industrious subjects, and a great amount of capital, besides experiencing great deteri- oration in point of morals.
tiers-état received a representation equal in number to that of the two privileged orders, the nobility and the clergy, and the parliament requested from the king a speedy dissolution of the National Assembly, the liberty of the press, and the suppression of the lettres de cachet. Hereupon the states-general were summoned on May 1, 1789, the first time for 175 years. The election of deputies excited a violent agitation throughout France, and the epithets friends or enemies of the people were appended to the names of the deputies. The assembly was opened by the king at Versailles, May 5, with a speech from the throne. The question whether the votes should be given individually, or by orders, led to violent debates. The tiers-état, in the ranks of which was Mirabeau, assumed (June 17th), on the motion of the abbé Sièyes, the title of the national assembly; a part of the nobility and the clergy united with it, and—the revolution was begun.

II. France from 1789 to 1814, or the French Revolution and Napoleon. With the changes which time introduces the character of society, new principles of social order are continually introduced, and every great change occasions a painful struggle. The middle ages established the principles of feudalism; the present age is democratic. The struggles attending the introduction of democratic principles on the horizon of Europe has been long, and, perhaps, have not yet ceased there, certainly not in the other states of Europe; France has led the way in the political reformation of the European continent, as Germany did in the religious. This is the light in which the first French revolution is to be regarded: that it took so very malignant a character owing to particular circumstances; to the nobility and the clergy quite as much as to the people. The French revolution forms a most important epoch in the history of society. Whoever considers it as the effect of chance does not understand the past, and cannot see into the future. It was not the accident of a day that roused the Bastille, and tore in pieces Manupon's edict relating to the parliament; it was not the deficit, nor the convocation of the states-general, that annihilated the feudal monarchy; even without the double number of the tiers-état, the revolution must have taken place. The deficit was not the cause; but a symptom; the root symptom, of the evil, which was announced that it would have soon produced another, for prodigality is the companion of despotism. Hatred of oppression roused the people to revolt; they stormed the Bastille; they might have been dispersed with the bayonet; but they would have destroyed that dungeon sooner or later. Permanent tranquillity could not have been restored by supporting oppression and tyranny, under cover of artillery; it was necessary that they should be overthrown. Louis XVI. might have dispersed the constituent assembly at the point of the bayonet; he could not have brought to life the ideas of liberty from the hearts of his subjects, if only the men of the last half of the eighteenth century; it was old abuses, passions, and prejudices that produced the revolution. The French revolution must needs be considered in a double point of view, as the consequence of execrable abuses, and, at the same time, of the development of the human mind; or, in other words, of knowledge, which always has a democratic tendency. The favourites of old abuses may say that this or that circumstance or individual was the cause of the whole revolution; this is the way in which the conquered party always reason; and we have seen that vile and execrable belief of the revolution of 1830 to have been occasioned by the fault of some particular person under him. Its leaders were not its authors; they were only its instruments: the true authors of the revolution were the imbecile, the tyrannical, and the criminal monarchs and ministers of France, his prodigious and unprofitable wars and his dragonades! The real authors of the revolution were an absolute government, despotic ministers, a haughty nobility, rapacious favourites, intriguing mistresses, and the indignation thus awakened, assisted by the general spirit of inquiry characteristic of the age. But if the French revolution finally assumed such a malignant aspect of anarchy as was evinced in the policy of the Jacobins, of selfishness and cruelty, to the almost total extinction of moral sentiment, on whom does the guilt of these excesses lie? Had not priests educated the people which overthrew the throne? Had not ministers and courtiers, statesmen in the purple of cardinals, princes who assumed the name of rois (rakes), and ladies of the court, poisoned the manners of the capital by their example, from the times of the regency, and seduced the nation into impiety and profligacy? We shall treat the revolution under the following divisions:

1. From the Constituent Assembly to the Establishment of the Republic (June 17, 1789—September 21, 1792). The national assembly consisted of 616 deputies of the tiers-état, 317 of the nobility, and the other members of the three estates. The king consented to the establishment of a new throne, of which the feudal system was considered the basis, rose gradually from the contest of the non-privileged with the privileged orders, of popular rights with the feudal prerogatives of the nobility and the clergy. When the representatives of the people continued their session, contrary to the order of the king, and pronounced the solemn oath (June 20th) never to separate until they had given a constitution to France; when the tiers état (June 23rd) asserted its rights in the royal presence; when the king was compelled to order the nobility and clergy to unite with the tiers-état (June 27th), then the ancient royal authority was lost. If these concessions of the king had seemed to render his concurrence in the wishes of the nation probable, the irritation was, therefore, the greater, when an army of 20,000 men was assembled under marshal Broglio, and Necker was suddenly dismissed. The tocsins were sounded, and, in order to dismiss the troops, an insurrection broke out in Paris, where the people were inflamed by the harangues of Camille Desmoulins (guillotined April 5, 1794). The Bastille was taken (July 14, 1789), the national guard established, and put under the command of Lafayette, and Louis was compelled to recall Necker, to withdraw his troops, and to adopt the tri-coloured national cockade; whereupon, in the session of Aug. 4th, after the feudal system, on the motion of the viscount de Noailles, had been unanimously abolished by the assembly, Louis was proclaimed the restorer of French liberty. In the midst of this tempest, the declaration of the rights of man was adopted, and the emigration (see Emigrés) of the nobles and the popular excitement daily increased. The famine in Paris created a fermentation, which the banquet in the opera-house of Versailles exasperated to fury against the court and the queen. October 5, an immense multitude of people proceeded from Paris to Versailles, and, on the 6th, compelled the king to remove, with his family, to the Tuileries. He was followed, on the 19th, by the national assembly who were preparing a free constitution for the state. The division of France into eighty-three departments; the declaring the

* The Mémories du Duc de La Loubens describe the profligacy which prevailed before the revolution.
estates of the clergy, estimated at 3,000 millions, national property; the alteration of the former title of king of France and Navarre into that of king of France and Deuxponts, the establishment of the clubs, among which that of the Jacobins became the most powerful; the adoption of the new constitution by the king; the civil oath, "to be faithful to the nation, the law, and the king, and to maintain the constitution," the romantic celebration of the fête of the Federation at the Champ de Mars (July 14, 1790),—were the principal events in the first act of this great revolution. The fixing of the civil list for the king (25,000,000 livres yearly); the conversion of the royal domains and the ecclesiastical possessions into national possessions; the suppression of hereditary rank and titles; the confiscation of the convents, and the grant of pensions to their tenants; the decree that the clergy should take the civil oath; the elevation of a supreme national court of justice, to try the offence of treason against the nation; the abolishing of the taxes on leather, oil, soap, starch, salt, and tobacco; the removal of the excise (douane) from the interior to the frontiers; the establishment of the land tax, of licenses for carrying on trades, of the fees for stamps and records; and the creation of assignats, according to the proposal of Mirabeau,—these were the principal acts of the national assembly in the first period. The second act was the great drama of the dissolution of the club of the deputies. To the disorganization of the assembly, that the king should not remove more than twenty leagues from Paris, and that, in case he should leave the kingdom, and refuse to return on the invitation of the assembly, he should forfeit the throne. The burning of the pope in effigy, at Paris, gave the signal for the revolution in religion, and the club of the Cordeliers (the party of Marat, Danton, &c.) inflamed the hatred of the king among the people. Louis now fled from Paris; but he was brought back from Varennes (June 25, 1791). He was hardly able to appease the irritated nation by accepting, in the assembly (Sept. 14), the new constitution of Sept. 3, 1791, by which he was declared commander-in-chief of the army and navy, with a cabinet of six ministers, to assist in the administration. The constituent assembly separated (Sept. 30), and was succeeded, October 1, 1791, by the legislative assembly, after the members of the first had agreed not to re-elect themselves, to become members of the second—a circumstance to which very serious consequences are ascribed. Meanwhile, the number of emigrant nobility and clergy increased. Among them were the brothers of the king, the counts of Provence and of Artois, prince Conéé, with his son and grandson, the dukes of Bourbon and of Enghien, and the marshal Broglie. They assembled French troops of the line at Coblenz and Worms, and were joined by several German princes (Wurtemberg, Deuxponts, Baden, Darmstadt, and Spire), whose dominions in the French territory of the empire had been reduced, with the organization of their forces, and were not restored, notwithstanding the intercession of the emperor, and the declaration of the diet, that this measure was a violation of the peace, France, however, offered to make compensation. The fear of the example of France, of the influence which its enthusiasm for liberty and equality, and the activity of the Jacobins, might have on the other nations, and the sympathy of the other sovereigns in the fate of Louis XVI., led to the project of saving the Bourbons, and extinguishing a flame which threatened the general conflagration of existing institutions, by an armed interference. The declaration of Pilsits, by Attilio Angiò (Aug. 27, 1791), to the brothers of the king, was only general and conditional. The assembly proclaimed its penceible intention, and declared that France would never undertake a war of conquest. This only increased the hatred of the nobles and the cabinets against the new order of things in France. Louis declared to the foreign powers, that he had freely accepted the constitution, was of no avail. Russia and Sweden entered into an alliance (Oct. 19, 1791) for the restoration of the emigrant princes. In vain Louis wrote to recall his brothers, and issued decrees against the emigrants. Charles X. (Oct. 20, 1792), agreed to the formation of a coalition against the king of Hungary and Bohemia, (April 20, 1792), on the motion of Dumourier, minister of war. July 14, 1792, Russia joined the coalition against France, to which Hesse and Sardinia had already acceded, and the German empire became a party to the same in the year 1793. During this war, the Jacobins gained strength in Paris. They mediated the overthrow of the throne; their influence predominated in the assembly; their attack on the Tuileries (Aug. 10) decided the victory in favour of the democracy. (See Petition.) The unfortunate Louis was suspended by the assembly, as a traitor to the country, and imprisoned, with his family, in the Temple. In one of his extrava- gant outbursts, at a council of war, he pitched his sword at the head of Lafayette, when it was known that the Prussians had penetrated into France, and that Lafayette had left the army. It began to be suggested that the most dangerous enemies of liberty were in the capital itself. Hence the bloody 2d and 3d September, 1792 (similar to the day of the Armagnacs, June 12, 1418), in which a band of human tigers massacred several thousand prisoners. At Rheims and other places, similar scenes of horror occurred. The oath of the assembly (Sept. 4), "swearing hatred to kings and royalty, and that no foreign power should ever be suffered to dictate laws to the French," was followed by the decree of the national convention, which took the place of the second national assembly, Sept. 20, 1792, declaring the abolition of royalty (Sept. 21), and the French republic one and indivisible (Sept. 28). With the former day began the new republican computation of time terminated by Napoleon, Jan. 1, 1806.

2. The History of the French Republic till the Establishment of the Empire (Sept. 21, 1792—May 18, 1804). The birth of the republic was ushered in with news of victory. Custine had taken Ments; the enemies had been compelled to leave the territory of France. Dumourier had conquered at Jemappé. The convention declared itself henceforward ready "to assist all nations desirous of recovering their liberty," by promising the suppression of feudal services in all countries occupied by French troops. At the same time, it decreed the penalty of death against all emigration. The French had not only in the three kingdoms of the empire, condemned Louis XVI. The majority in the convention was overawed by the furious populace, who demanded the head of the king; and war was declared against the kings (not the people) of England and Spain, and the hereditary stadholder of Holland. (See Brissot.) Thus the empire, Britain, Prussia, Spain, France, and Holland, the enemies of France, were joined by Sardinia, and the pope formed a coalition against the republic, which was acknowledged by Venice alone. To foreign war was added the civil war of La Vendée, which rose to avenge the death of the king. The republic seemed to be lost, and armed itself with the weapons of defence. On Jan. 27, 1793, it threw the moderate party, the Girondists (q.v.), who, there is little doubt, would not have been able to
save the country. The revolutionary tribunal was erected, and the terrorists, Danton, Robespierre and Marat (see these articles), ruled the nation with the guillotine. Marie Antoinette, the queen of France, met the fate of her husband (October 10, 1793); the duke of Orleans (Philippe Égalité), and the pious Émigrés Bonaparte (see these articles), in 10 colonies, and soon followed her; all the churches of Paris were shut; the church plate was declared the property of the nation. November 10, the festival of Reason was celebrated in the ancient cathedral of Notre Dame, instead of divine service. The democratic constitution of the Jacobins was exerted, and freedom was granted to the negroes, the signal for the massacre of the whites! (See Hayti.) The ex-nobles were persecuted with the greatest fury; the oppressions of centuries were reveuged with a savage ferocity. The reign of terror continued nine months, during which Robespierre celebrated the festivals of Mankind, of the Supreme Being, of Stoicism, of the French people, &c., while the blood flowed in torrents from the guillotine, and under the mitraillets of Collet d'Herbois and others (particularly at Lyons, Bourdeaux, Nantes, Toulon, &c.). The reign of terror was finished by the fall of Robespierre (July 27), 1794. The hall of the Jacobins was closed, and the revolutionary tribunal received a new organization. The convention no longer allowed the affiliation of popular societies; and the free exercise of religion was established (February 21, 1795). Still, however, it cost many struggles with the Jacobins and the terrorists, who opposed the spirit of moderation; as, for instance, on the 1st Prairial (May 20), 1795. A new (the third) constitution was adopted. The sections of Paris endeavored in vain to restore royalty; they were dispersed by Barras and Bonaparte (see these articles), in ten colonies, and the latter, in July, 1795, dissolved the convention, on the bloody 13th Vendémiaire (Oct. 5), 1795. On the 26th of October, the convention finished its session, and the directory commenced. (See A. C. Thibeautand’s Mém. sur la Convention et le Directoire, Paris, 1824, 2 vols.) The legislature now consisted of the council of ancients (250 members), and the council of the five hundred. The executive directory (Barras, Rewbel, Carnot, Larévièlère-Lépeaux, and Letourneur) restored order in La Vendée, but substituted mandates for assignats (March 11, 1796) without success. This measure of the Directory of May 26 was impeded by the insolence of the conventionarians, arising from the double bankruptcy of the republic. The national institute of science held its first session Oct. 6, 1796, and a national consistory, sworn to conform to the ordinances of the council of Trent, was established. The revolution of the 18th Fructidor (Sept. 4), 1797, confirmed the power of the directory. During these numerous internal revolutions, the French arms had conquered Savoy and Nice, Belgium twice, Germany to the Rhine, and the Netherlands. Able generals, at the head of inexperienced troops, were rendered victorious by the strategy of Carnot. The old European tactics could not resist the new military system. The nation rose en masse, and thirteen armies of the republic were victorious over the Hanoverians, the British, Dutch, Austrians, and Prussians. Tuscany concluded a peace with the French republic, February 9, 1795. The fortune of the French arms in the Netherlands, and other causes, induced Prussia to conclude a separate peace at Basle (April 5, 1795). Spain followed the 23d July, and Hesse-Cassel the 28th August, the same year. A line of demarcation assured the neutrality of Northern Germany, under the protection of Prussia. Of appointing Malesherbes to succeed him in the direction of the state, the Directory proposed to establish an offensive and defensive alliance with the republic against Britain, Austria, Britain, and Russia, however, formed a closer alliance (Sept. 28, 1795), to arrest, if possible, the increasing predominance of France. While the French were thus victorious by land, they suffered much by sea. Britain put forth her whole strength to extend her supremacy on the sea and in both the Indies. Pitt’s impartial system of starving neutrals, and not less injurious to other states than to France. The attempts made by the British to support the royalists by landing in France, did not answer the expectation. But most of the French colonies fell into the hands of the British, and, after the attack on the fleets of Toulon and Brest (May 18, 1795), were rendered of little use to the republic. France, Austria, Prussia, and Sardinia carried on war principally by means of British subsidies. On the other hand, the directory maintained its armies of conscripts by requisitions of munitions and by paper money. The enemy’s country furnished, also, the richest resources, particularly Holland, Germany, and Italy. The arms of general Bonaparte finally effected a peace. The victories of Montenotte, Millesimo, Lodi, Arcole, Rivoli, and the Torglamenti, in Italy (April 11, 1796, to March 16, 1797), not only established the independence of Genoa and the independent republics of Switzerland, but in Germany, and the retreat of Marmont led to the preliminaries of Leoben (April 18, 1797), which were followed by the peace of Campo-Formio (q. v.), Oct. 17, with Austria, and the congress of Rastadt, for the negotiation of a peace with the German empire. Meanwhile an alliance, offensive and defensive, had been concluded between France and Spain (Aug. 18, 1796), and Britain had declared war against Spain. Venice was converted into a democracy, Genoa into the Ligurian republic, and a peace was concluded between France and Sardinia. Holland was stripped of many of her colonies by Britain, who maintained the balance of power. The Directory, also, arose between the French and North American republics, and new occasions of war soon sprang up on the European continent. Rome was transformed into a republic (Feb. 10, 1798), Switzerland conquered, and the execution of the project of attacking Great Britain in her most vital point, the Indies, was attempted, by Bonaparte’s expedition into Egypt. But the French fleet was annihilated, at Aboukir, by Nelson; general Bonaparte was unsuccessful in Syria; and the second coalition was formed, at the instigation and by the subsidies of Britain. The Treaty of Campo-Formio was signed on the 9th of October at Rastadt was dissolved after the assassination of two French ambassadors; Austria and Russia united themselves with the Porte, and Naples undertook to avenge the pope. The republic crushed its ally, the king of Sardinia (December, 1798), to secure Upper Italy, and the republican army entered Naples, in triumph, and founded the Parthenopean republic. Tuscany was likewise occupied. But the fortune of arms was soon changed. The Austrians and Russians gained several battles, and conquered Italy (1799). But Holland and Switzerland were successfully defended; the former by Brune, the latter by Masséna. It was then that general Bonaparte, recalled from Egypt (q. v.) by his brother Joseph, who informed him of the state of things in Europe, placed himself at the head of the republic. The weak directory was abolished, and the 18th Brumaire (Nov. 9, 1799) gave France a consular government, and her fourth constitution. This was, again, an approach to monarchy. Three consuls, chosen for ten years, and capable of being re-elected, were placed at the head of the government; but the first consul (Napoleon Bonaparte) alone had the power of appointing the other two. He chose them himself, ambassadors, and all military and naval officers; he also decided finally in all other affairs of
government, the two other consuls (Cambacérès and Le Bru) having only a delibartive voice. The legis-
lation was in the hands of a tribunate of 100, and a corps législatif of 300 members, a fifth of whom were to be renewed annually. The former discussed the laws proposed by the consuls; the latter
decided upon them by a silent vote; neither of these bodies could propose any law. The consuls, leg-
islators, and tribunes were chosen, not by the people, but by a petit conservateur, which consisted of
eighty members, at least forty years old, and supplied its own vacancies on the nomination of the first
consul, the tribunate, and the legislative body. None of these bodies were responsible. This con-
stitution underwent some modifications in August, 1802, when Bonaparte was declared consul for life;
the government now appointed the presidents of the departmental assemblies and the electoral colleges,
and the first consul appointed his successor and the senators, &c.; the government convoked, adjourned,
and prorogued the legislative bodies at pleasure. Bonaparte had scarcely seized the reins of govern-
ment, when every thing received a new form. He levied an army, and, after ineffectual offers of peace
to Britain and Austria, passed the great St Ber-
nard, restored the Cisalpine republic, and conquered at Marengo (June 14, 1800); after which Moreau
declined the field; and the French, by the battle of Hohenlinden (Dec. 3, 1800), La Vendée was appeased,
and a treaty of peace concluded with the United States of North America. Austria was compelled
to abandon Britain, and to sign the peace of Lun-
ville in the name of the German empire (Feb. 9,
1801). The left bank of the Rhine was ceded to
the republic, and this river became the boundary be-
tween France and Germany. This treaty was fol-
lowed by those with Naples, Russia, the Ottoman Por-
to, that of Amiens with Britain (March 27, 1802),
and the concordate, concluded with Pius VII., which
made the Catholic religion once more the established
religion of France. From that period, the diplo-
macy of Napoleon governed the continent of Europe
for thirteen years. The kingdom of Etruria was
created, and given to the duke of Parma; the great
plan of indemnification was dictated to the German
empire by France; Switzerland received an act of
mediation, which committed itself with France; Holland
was treated almost as a part of France, and received
a constitution from Paris; Piedmont, Parma, and
Piacenza were incorporated with France, and the first
consul was appointed president of the Italian repub-
lic. In France, order, security, and tranquillity suc-
ceded to the tumult of a revolution. Many deported
individuals obtained permission to return home; the
severe measures against the emigrants were softened;
free exercise of religion restored; and the establish-
ment of the legion of honour (May 19, 1802) united
the nation and the army with the head of the govern-
ment. When the war with Britain was renewed (Nov.
2) the French, who had created a general terror in
France, the victories of Napoleon won him the favour
of the nation, and enabled him to convert the repub-
lic into a hereditary monarchy. For further infor-
mation, see the article Bonaparte.

3. History of the Empire of France to the Restora-
tion of the Bourbons and Royalty (May 13, 1804—
May 3, 1814). May 18, 1804, appeared the senatus
consulte organique, which declared Napoleon emperor of the French, and the imperial dignity hereditary in
his family. This decree of the senate, and the im-
perial decree of March 30, 1806, regulated the privi-
leges of the imperial family, the inheritance, the
titles, and revenues of its members, and the par-
ticular relations to the person of the emperor. The
civil list remained as it had been fixed by the consti-
tution of 1791—50,000,000 livres annually. At the
same time were established the great officers of the
empire, the two consuls and the tribunate of 100,
and the supreme tribunal, which was to judge offences of members of the imperial family and of the high officers of state, high treason,
and all crimes against the state or the emperor. The
electoral colleges also received a precise organization.
The senate was the appointment of the senators, and the right of fixing the salaries of the officers be-
given to the emperor. The legislative body was also
preserved; but the tribunate, which alone ventured
on opposition, was suppressed August 19, 1807. The
new emperor crowned himself and his wife, in pre-

cence of Pius VII., in the church of Notre Dame,
December 2, 1804. Three months later (March 18,
1805), the emperor of the French was made king of
Italy, and solemnly crowned (May 23) in Milan, and
the order of the iron crown was established. Genoa
(the Ligurian republic), and the principality of Gua-
talla, were soon after incorporated with France.
Lucca and Piombino were erected into a duchy, and
conferred on one of the emperor's sisters, and Parma
and Piacenza were placed under the French govern-
ment. The emperor of Austria and many German
princes acknowledged Napoleon as emperor. The
Russian and Swedish chargés d'affaires left Paris,
and the Russian, Peter the Great, and the Swed-
ish, Frederick Adolph, Sweden concluded a sub-
servient treaty with Brit-
ain, and Russia entered into a third coalition with
Britain (April, 1805) against France. The
French had already (June 3, 1803) taken possession
of Hanover. The emperor of France rigorously
prohibited the introduction of British manufactures,
wherever his power extended, and threatened Brit-
ain with a descent. Pitt therefore drew Austria
(August, 1805) into the coalition, and the French
army marched from their encampment at Boulogne
to Germany. The war was of short duration. The
surrender of an Austrian army, under Mack, at Ulm
(October 17), and the battle of Austerlitz (December
2), produced the peace of Presburg (December 26,
1805), in which Austria was compelled to sacrifice
about 21,190 square miles, and 3,000,000 of inhabi-
tants (among them the Tyrolese). Napoleon gave
to his allies, the rulers of Bavaria and Wurttemberg,
whom his power extended, and threatened Brit-
ain with a descent. Pitt therefore drew Austria
(August, 1805) into the coalition, and the French
army marched from their encampment at Boulogne
to Germany. The latter was also granted to Baden. Each of these three states likewise received a considerable increase of territory and
inhabitants. The kingdom of Italy was enlarged
by the addition of 10,000 square miles, and France
obtained a decided predominance over the German
princes. The victory of the British at Trafalgar
(October 21, 1805) over the united fleets of France
and Spain, destroyed an armament which had cost
six years of preparation, and 60,000,000 francs.
1654 cannon and 15,000 men fell into the hands of
the victors. Napoleon at this time changed his system; he undertook to restore terror and convic-
tion by repeated experience, that he never could meet the British successfully by sea, he re-
solved to conquer them by land, and attempted, by
the continental system (q. v.), to suppress all inter-
course with Britain. With this view, he abandoned
Hanover to Prussia, which involved that power in a
war with Britain. The dynasty of Naples was de-
clared to have forfeited the throne, on account of
the breach of its engagements with France. Joseph
Bonaparte was made king of Naples and Sicily
(March 30, 1806); Louis, the second brother of Na-
poleon, King of Holland; Eugène, Napoleon's son-in-law, who he had adopted, was
created viceroy of Italy, and married to the daugh-
ter of the king of Bavaria; Alexander Berthier, the
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companion in arms of the emperor, was created prince of Nice, and Talleyrand became minister of foreign affairs, prince of Benevento; Bertrand, prince of Ponte-Corvo; Joachim Murat, grand duke of Cleves and Berg; and Stephanie Beauharnais, niece of the empress, whom Napoleon had adopted, was given in marriage to the crown-prince of Baden. All those who immediately belonged to the new dynasty, or were united with it, were to be attached to France by a federative system. The imperial family statute was promulgated March 30, 1806. The accession of Bavaria, Wurttemberg, and Baden, to the federal system of the "great empire," and the incorporation of the electorates into one, had torn asunder the political union of the German states. Napoleon established the confederation of the Rhine (q. v.), of which he was recognised protector, July 12, 1806; and Francis II. resigned the imperial crown of Germany, August 6. Meanwhile, Fox's communication to Talleyrand of a plot against the life of the emperor had awakened feelings of mutual confidence. Russia, who had not been included in the peace of Presburg, entered upon negotiations; but the death of the British minister, Fox, and the changes in the situation of affairs, prevented them from resulting favourably to the emperor. Russia refused to ratify the preliminaries adopted by Oubril. The British ambassador Lauderdale was recalled; and, in the autumn of the year 1806, Prussia was seen united with Russia, Sweden, and Britain against France. The Prussian cabinet had been induced to assume a threatening posture towards France, by information of the offers of France to restore Hanover to Britain, and had projected a northern confederacy, to counterbalance that of the Rhine. Napoleon, after offering peace more than once in vain, accepted the challenge, and the battles of Jena and Eylau (February 16, 1807) were the decisive engagements of the war. A Partition of Poland was made the basis of the peace of Tilsit (July 7 and 9, 1807). Austria had remained neutral, awaiting a more favourable opportunity of effecting its long-cherished projects against France. Napoleon had no sooner secured himself in the east and north, than the condition of the Peninsula invited him to attempt the conquest of that country. Portugal was still reluctant to break with Britain. A French army was therefore marched through Spain, which occupied Portugal without resistance. The royal family fled to Brissel (November, 1807). A family quarrel, of the most insidious character, distracted the court of Madrid. Napoleon interfered in the character of a mediator, and the feeble Charles IV. was induced to resign the crown of Spain, at Bayonne, in the emperor's favour. The Spanish princes, too, were obliged to renounce their claims. Joseph, the king of Naples, was created king of Spain, and the grand duke of Berg ascended the throne of Naples. But the events in Spain affected the family interests of the house of Hapsburg; and the resistance of the Spanish nation, supported by the British, to the French troops, seemed, to the emperor, to afford an opportunity for overthrowing the new arrangements in Germany and Italy. Notwithstanding the interview of Napoleon and the emperor of Russia at Erfurt (q. v.), (September, 1808), the pending negotiations with Vienna and London, the union of Paris and Peters burg, and the prospects of Napoleon in the Peninsula, Austria, though she had previously disavowed unfriendly intentions towards France, entered into a new alliance with Great Britain and Russia, but hurriedly, August 30, 1809; but the battle of Wagram compelled her to submit to the treaty of Vienna (October 14, 1800), which dismembered her provinces, and distributed them among the neighbouring states, erected a new state from the Illyrian provinces, incorporated the papal dominions with France, and cut off Austria herself from all communication with the sea, by the loss of her ports on the Adriatic. She lost about 42,300 square miles, with more than 3,000,000 inhabitants. The dominion of France in Italy and Germany now seemed firmly established. The dominions of the emperor and his allies, Austria, Portugal, and Spain, were, however, still entirely surrounded by states under the protection and influence of France. The powerful emperor of Russia, united by the ties of personal friendship with the emperor of France, compelled Sweden to accede to the continental system; whilst the Ottoman Porte, fluctuating between France and Britain, was prevented, by the fear of Russia, from undertaking any thing of consequence. In France, the revolution was considered at an end when the emperor divorced his former wife, and married Maria Louisa, archduchess of Austria (April 1, 1810), in order to secure to him, in the event of his crowning himself emperor, the throne, and surround himself with faithful adherents. Napoleon had, by an ordinance, March 1, 1808, in conformity with the decree of the senate of August 14, 1806, but contrary to the constitution, re-established a hereditary nobility and the primogeniture. This was, however, different from the former feudal nobility, since the title was connected with a certain income, without any privileges in regard to taxes, jurisdiction, conscription, offices, &c., and the rank was lost with that income. While lying before Vienna (1809), Napoleon added to the two orders of the legion of honour and of the iron crown, that of the three golden fleeces. (See Fleeces.) Thus he provided for the splendour of the throne, for the reward of merit, and the gratification of vanity. Meanwhile he directed his attention to all the departments of government. He provided for the more effectual administration of justice by a new code, and for the execution of the laws by the organization of courts of every degree. To repress usury, he issued a decree (March 17, 1808), which secured the peasantry from the extortions of the Jews; and it was one of the favourite but impracticable plans of the emperor, to effect a political and moral regeneration of the Jewish nation to the likeness of Christianity. (See Jews.) He exerted the same activity in the encouragement of industry and internal commerce.—witness the efforts to discover useful substitutes for the prohibited colonial products; the great prize offered for the invention of the best machine for spinning flax; the construction of roads, canals, ports, and his various architectural works. But comparatively little was effected, because everything was subjected to military orders, where free action is the soul of success, and because of the disturbed state of Europe. The institutions for education in the empire received a military organization. March 17, 1808, the imperial university, which united all the seminaries of instruction in the empire into one great whole, was established. Napoleon's policy in regard to colonial products exerted the greatest influence on the political connexions of Europe. It led to a division of all the continental powers, and was most injurious to commerce. (See Continental System and Colonial Products.) Britain opposed her orders in council to the decrets of Berlin and Milan, and still kept up her commercial intercourse with some parts of the continent. Napoleon, therefore, had recourse to violent measures, in which we are to look for the
immediate causes of the war with Russia in 1812. In the treaty of March 16, 1810, between France and Holland, the latter had, but the obstinacy of Napoleon of Valais instead, Zeeland, with the island of Schouwen, and the part of Guelders on the left bank of the Waal, for which the attack of the British on Holland, in 1809, had given a pretext. The king of Holland having resigned the crown in favour of his son (July 1, 1810), the kingdom was incorporated with France, by the decree of Rambouillet, July 9, 1810. But Britain persevered in maintaining the orders in council, and Napoleon declared it was necessary that the whole coast of the North sea should be placed under his immediate inspection. The months of the Ems, the Weser, and the Elbe, with the Hanse towns (about 12,714 square miles, and more than 1,000,000 inhabitants), were therefore arbitrarily incorporated with France (December 10, 1810). The Valais had already (November 12, 1810) experienced the same fate, for the securing of the road over the Simplon. The tariff of Trieron, which was designed to prevent the use of colonial articles on the continent, by the imposition of enormous duties, was forced on all the federative states, while the decree of Fontainebleau ordered all articles of British manufacture found in France and the dependent states to be burned. This order was strictly observed in France, whilst means were taken to promote the production of certain important articles, such as sugar, tobacco, indigo, in the country. The importation was also permitted by licenses to the advantage of the government. But the union of Northern Germany with the empire had injured some of the princes of the confederacy. The indemnifications which had been promised to them could not overcome the odium of this step. The principal of those injured princes was the duke of Oldenburg, a near relation of the Russian emperor; and the continuance of peace had already become problematical. But, before these apprehensions were realized, the birth of the king of Rome gave the emperor new hopes. In 1809, when Napoleon declared the papal territory a province of France, and Rome a city of the empire, he determined that the heir apparent of France should bear the title of king of Rome, and that the emperor of France should be crowned in Rome within the ten first years of his government. The states of Italy, Spain, the duchies of Modena and Parma, who opposed the French with unexpected firmness, and the daily increasing prospect of an approaching war with the North, which refused to co-operate any longer in the views of France (although the friendly relations hitherto maintained with the court of St Petersburg were not yet formally broken off, and the prince of Ponte-Corvo, the near connexion of Joseph, the brother of the emperor, had been elected successor to the throne of Sweden), did not promise favourably for the future. The British also carried on an important commerce with Russia, in colonial produce, through Gothenburg and the ports of the Baltic; and this commerce was increased by the establishment of Stockholm and Petersburg. The commercial policy of Russia in 1810 and 1811, and its disapprobation of the treatment of the duke of Oldenburg, had excited the distrust of Napoleon. He was convinced of a declaration of war against Britain by the United States, with whom he had been reconciled, and was afraid that he might speak the language of the British, who had offended their government by the following words: "The consequence was a war, which commenced in July, 1812, and in which, besides the states of the confederation of the Rhine and the duchy of Warsaw, Austria, and Prussia were allies of France. (Concerning this war, which recall back from the Kremlin, where Napoleon had his headquarters in the uncomfortable weather of Moscow, across the battle-field of Leipzig, to the heights of Montmartre, see the article Russian-German war from 1812 to 1815.) The immense preponderance of the French empire, and its endless wars and exactions, had exhausted the patience of the nations of Europe; and princes and people rose together to throw off the load. (The disappointment of the expectations held out to the people of Europe, when they made common cause with the princes against Napoleon, this is not the place to discuss.) An army of 812,000 men, to which, according to the agreement made at Trachenberg, in Silesia (July 12, 1813), Austria had furnished 268,000 men, Russia, 249,000, Prussia, 277,000, and Sweden, 24,000, destroyed the French empire, and the trophies of twenty years of victory, in nine months. On March 31, 1814, the allied troops entered Paris, and Alexander declared, in the name of the allied sovereigns, that the French crown should be restored to Louis XVI., his son, to be occupied, not with the French crown, but with any of his family; that they acknowledged the right of France only to the territory embraced within its ancient limits under its kings; and, finally, that they would acknowledge and guarantee the government which the French nation should adopt. They therefore invited the senate to establish a provisory government for the administration of the country and the preparation of a constitution. Accordingly the senate assembled April 1, under the presidency of Talleyrand, whom, with four other members, they charged with the provisory government. On the next day, it declared that Napoleon and his family had forfeited the throne of France. The legislative body ratified this decree, which the provisory government published, and soon after made known the recall of Louis XVIII. (q. v.) to the throne of France. Meanwhile (April 11) Napoleon had resigned the crown unconditionally in favour of his son, at Fontainebleau. This treaty was concluded the same day ceding to him the island of Elba.

III. History of France, from the Restoration of the Bourbons, to the Declaration of Louis-Philip, King of the French; from 1814 to 1830. The Bourbons were restored to the throne of France. But did the nation receive them with joy? Those, no doubt, who had nothing to expect but from a change; those who wished for a return of the feudal times; those who still cherished a sort of religious attachment to the old dynasty; the greater part of the clergy, and those who desired the restoration of the ancient ecclesiastical establishments; and, finally, those who were sick of war, and hoped for peace under the Bourbons,—these welcomed their return; but the nation at large received them with reluctance, chiefly for three reasons: 1. because they had been placed on the throne by foreign arms (Louis XVI. had been acknowledged, not as the king (or throne of the British); 2. because, while they had been absent from France, it had undergone a total change, and they had thus become strangers to the country, in which the principles of the revolution were permanently established; 3. because they brought back with them: 1. the spirit and tenantry of modern French politics. The Bourbons were, in fact, in a situation

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similar to that of some families in the middle ages, who seated themselves on conquered thrones, but formed no integrant part of the nation. There was, from the beginning, a feeling of distrust between the rulers and the nation—a state of things which can never be completely cured. In addition to all this, the government was inefficient. During the fifteen years in which the Bourbons once more occupied the French throne, the division between the two parties was constantly widening, and the partisans of the government were becoming more and more explicit in their demands for an absolute monarchy. In addition to all this, the public indignation was excited by the absurd theory of legitimacy, as promulgated by the congress of Vienna—a theory of which a definition never could be given, and for which, nevertheless, "Sophistry lent her colours to the most extravagant preludings of tyranny," to repeat the words of Sir James Mackintosh; a theory which offended the deepest feelings of the nation, and declared the struggles of twenty-six years to be nothing but insurrectionary disturbances; and which, while it declared Napoleon an illegitimate ruler, acknowledged the lawfulness of the sway of the kings of Bavaria, of Saxony, and several others, whom he had created. So entirely was the spirit of the Bourbonists at variance with that of the nation, that many individuals, who had at first welcomed the return of the royal family, declared for Napoleon when he landed from Elba, convinced that the Bourbons and France were no longer fit for each other.

We must be content here with a brief enumeration of the events which have taken place, for a development of the causes which have produced them would far exceed our limits. Louis XVIII. entered Paris, May 4th, 1814, and as early as May 2nd, the constitution already adopted by the senate, April 5th, and by the legislative body on the following day. This fundamental law was to be confirmed by Louis XVIII., before his ascending the throne; but he merely issued the declaration of St. Ouen (May 2), in which, as king of France and Navarre, he publicly declared his adoption of the principles of the new constitution, as his brother, the count D'Artois, had already done in the character of lieutenant-general of the kingdom, but reserved for himself the right of revising the document, which bore marks of the haste in which it had been framed. This constitution and various public regulations by the charter was presented to the nation by the king on the 4th of June. It contained the principles of a limited monarchy; as, the equality of all Frenchmen in the eye of the law; the equal obligation of all to contribute to the expenses of the state; the equal right of all Frenchmen to all offices; personal liberty; the free exercise of religion; and the liberty of the press; the security of property; the oblivion of the past; the suppression of the conscription. The person of the king (in whom was vested the executive power, the command of the forces of the kingdom, the right of declaring war, and making peace, of appointing officers, and proposing and publishing the laws) was declared inviolable; the legislative power was vested in him in conjunction with the two chambers; laws relating to imposts and taxes were required to be presented first to the chamber of deputies; the two houses were permitted to petition for the proposal of a law; the legislature was required to grant the civil list of the king for the period of his reign. The king convoked the chambers, named the peers, hereditary or personal, prorogued the chambers, and dissolved the chamber of deputies, but many months; the two chambers could only be in session at the same time; the chamber of deputies was to be composed of deputies chosen by the electoral college, one fifth to be renewed yearly; to be eligible as a deputy, it was necessary to be forty years old, and pay 1000 francs of direct taxes. The king appointed the presidents of the electoral colleges, and the present of the chambers, out of five candidates proposed by the chamber. The chancellor presided in the chamber of peers. On the 14th of May, Louis created the new ministry, and, on the 3d of August, a new council of state. The king's household was newly organized; and the old nobility were restored to many privileges at the discretion of the minister. The royal orders of the Holy Ghost, of military merit, the order of St. Louis, and that of St. Michael, were revived; the legion of honor received a new decoration (the portrait of Henry IV.) and a new organization, and the order of the silver lily was founded. The peace concluded with the allies at Paris, May 30, 1814, confined France to the limits of January 1st, 1792; it retained, however, the territories acquired in its interior by the incorporation of Avignon and Vennissin, notwithstanding the protest of the pope (see Mauenez's Réflexions sur les Prétentions de la France sur l'avignon et au comte de Fernissin, 1818); Montbéliard, too, and similar places, remained in its hands. It was also permitted to retain Amegny and Chamberry, from Savoy. On the other hand, Great Britain retained possession of Malta; and France resigned to that power the islands of Tobago and St. Lucia, in the West Indies, and the Isle of France. The other colonies were restored to France, who also kept possession of the treasures of art carried off from countries which had been occupied by her arms. A number of ordinances provided for the re-organization of the kingdom. The formation of a new army was to be effected, and measures were taken to retrieve the disordered finances; the state of affairs did not allow any diminution of the taxes; the droits réunis (q. v.), and the monopoly of tobacco, notwithstanding their unpopularity, were preserved. The civil list of the king was again fixed at twenty-five million francs, and the debts, amounting to thirty millions, which the king had contracted during his residence in foreign countries, were assumed as the debts of the state. But the freedom of the press, promised in the charter, was subjected to restrictions by the establishment of a censorship, and the laws and regulations passed afterwards were in the interest of the nation, especially of the Parisians, who could not tolerate the restoration of the ancient forms and principles. It was soon perceived, that a great difference of opinion prevailed among the members of the royal family and among the ministers. The rising ambition of the clergy was discerned, and bigotry began to raise its head. The nobility referred on the old nobility and the emigrants who had returned with the court, also excited great discontent. The national pride was offended by the public declaration of the king, that he owed his crown to the prince regent of Britain. In the court was in the state of the highest irritation; the remembrance of him under whom they had acquired so much glory and power was yet fresh, when they saw their corps dissolved, their doteons, their pay and pensions diminished, their importance and their influence destroyed, and they themselves compelled to change their favorite badges for others, on which they had formerly trampled. The holders of the national domains feared to lose them. The people were discontented with the burden of the taxes, the alleviation of which had been promised to them. In this state of public feeling, nothing could be more hazardous than the thought of a sudden reappearance of Napoleon on the coast of France, the 1st of March, 1815. These circumstances explain why, without the existence of an actual
conspiracy in favour of Napoleon, the measures taken to oppose his progress were unsuccessful; why the army and a great part of the nation were prepared for him, and why, after a march of eighteen days, which resembed a triumph, he was able to enter Paris (March 20) without shedding a drop of blood. The king and his partisans left the country. Napoleon immediately annulled most of the royal ordinances, dissolved the two chambers, and issued a new and is to say, he determined that he should content himself with the limits of France, as settled by the peace of Paris, and that he would establish his government on liberal principles. But he could not satisfy the expectations of the different parties; much less could he avert the danger of a new war with Europe. As soon as the news of Napoleon’s landing in France was received at Vienna, the ministers of all the allied powers, who were assembled in congress there, declared Napoleon (March 13, 1815) the enemy and disturber of the repose of the world; and that the powers were firmly resolved to employ all means, and unite all their efforts, to maintain the treaty of Paris. For this purpose, Austria, Russia, Britain, and Prussia concluded, March 25th, a new treaty, on the basis of that of Chaumont (March 1, 1814), whereby each power agreed to bring 150,000 men into the field against Napoleon, who, on his part, was indefatigable in preparing for war. At the same time (April 22), he published the additional act to the constitutions of the empire, and summoned the meeting of the Champ de Mai, which accepted that act (June 1). On the 7th of June, the new chambers met. The army expressed great attachment to him, but the nation was less confident. His greatest difficulty was the want of supplies. The expedition of Murat against Austria (April, 1815) frustrated the secret negotiations of Napoleon with the court of Vienna. War was unavoidable. The armies of the allies formed a cordon around the frontiers of France, extending from Ostend to Switzerland, and beyond to Italy. Napoleon, with his main army, advanced to meet the British and Prussians, under Wellington and Blucher, who were approaching from the Netherlands. After some skirmishes with the outposts on the frontiers, the French attacked the Prussians at Thun in the Sambre, June 15, and drove them back. On the 18th, Napoleon gained a victory over the French in the plains of Fleurus, Ligny, and Quatrebras. But, on the 18th, he was entirely defeated at Waterloo (q. v.), and the allies advanced, almost without resistance, towards Paris. As Napoleon saw that France was lost to him, he resigned the crown, on the 22d of June, in a proclamation to the French nation, and at the same time declared his son emperor, under the title of Napoleon II. A provisional government, at the head of which was Fouché, was vested with the administration of the state. Napoleon left the capital, and surrendered himself to the British, as the way to avoid the same fortune that hadfallen to the late kings of France, and the king, was pure in a less degree. All others were in their eyes more or less suspicious, and not true Frenchmen. On the other hand, the party directly opposite the ultras considered every thing which had happened in France for the preceding twenty-five years, as belonging to a period of great national disasters, and the noble and glorious contest of every Frenchman to have contributed according to his means. Whoever abandoned France at that time, whoever deprived her of his services, or bore arms against her, whatever may have been the form of government, was a traitor to his country. The attacks of the ultras in the two chambers upon the
The new chamber was opened, November 4, 1816, with a speech from the king, which described in high terms the merits of Fraunce. The budget of 1817 was much greater than that of 1816, on account of the deficit of the three preceding years. The principal objects discussed in the two chambers related to the electoral colleges, the finances, the responsibility of the ministers, and the freedom of the press. The independent deputies obtained the law of election of February 5, 1817, and the recruiting law of March 6, 1818, but did not succeed in their attacks on the laws of exception, by which the complete operation of the charter was prevented. Meanwhile, the ultramarists, particularly by the discovery of their intrigues in exciting the troubles in Grenoble, 1816, and in Lyons, 1817. The ministers had also the majority in the session of 1817, which was closed May 16, 1818. The administration, however, oscillated between the contending parties, until the discovery of the white conspiracy, in July, 1818, by which it was wished to encourage the allies to assist in abolishing the charter, when it inclined more to the liberals and the national party. (See Decazes.) On account of the appearances of permanent tranquillity in the kingdom, the ministry succeeded in obtaining a diminution of the army of occupation one fifth, in the spring of 1817; and the financial difficulties of 1817 were obviated by a loan from the Barings in London, and Hope in Amsterdam. The public confidence in the administration of the finances was increased by the admission of French houses in the loan of 1818, who offered more than was wanted, and on better terms than the foreigners. But the new loan of twenty-four millions, which was necessary to effect the complete evacuation of France by the army of occupation in the autumn of 1818, was concluded, at the request of the allies, with the houses of Barings and of Hope, notwithstanding more favourable conditions offered by the French bankers, Lafitte, Casimir-Perrier, and others, who were willing to engage for the whole sum. This circumstance gave such offence in France, that the foreign houses finally relinquished a part of the sum in favour of some of the French houses. With the evacuation of the French territory by the foreign troops, which was determined upon by the congress of Aix-la-Chapelle, the 9th of October, 1818, and accomplished in the course of the same year, was connected the payment of the expenses of the war, and of the individual claims of the subjects of foreign powers on the French government and nation. Here the French diplomacy was successful. In the settlement of the matter of the liquidations, the amount of which was reduced from 1600 to 1390 millions, the payment of the debt which had been assumed by France, by the treaty of May 30, 1814, and acknowledged by the chamber of 1815, as well as by the treaty of November 20, 1815, was postponed until the year 1818; and, as Bonaparte and Wellington were agreed on this point, the other commissioners were obliged to accept, in payment of these 1390 millions, a rent of sixteen millions and 40,000 francs, which, at the market price, corresponded to a capital of 275 million francs—about the seventh part of the amount. Of these 1390 millions, which was granted to Britain in a separate article, to satisfy the claims of British subjects. Finally, the remaining 280 millions were reduced at Aix-la-Chapelle to 265 million francs. France was admitted, November 12, into the alliance of the great European powers by the Convention allemande, which was concluded in the declaration of the Christian law of nations, as the new basis of the European policy, at Aix-la-Chapelle, November 15, 1818. The old royalist spirit continued to revive in France, and the prime minister, the duke de Richelieu (q. v.), declared himself against the further development of the constitutional system, and against the existing mode of election. A secession in the ministry was the consequence, until December, 1818, when the minister Decazes gained a complete victory over the ultras, in the defence of the law of election and the maintenance of liberal principles. Louis XVIII. named a new ministry, December 28 (the third since 1815), in which the marquis Dessoies (general and peer) succeeded Richelieu as president of the ministerial council; baron Louis succeeded Corvetto in the department of the finances; marshal St. Cyr received the department of war; Lainé was followed by the count Decazes, in the ministry of the interior (after the suppression of the ministry of the police), and de Serre was made keeper of the seals, and minister of justice. But in the double conflict with the ultra royalists, and the extreme left (see Céde droit), this ministry was overthrown the 19th of November, 1819. Dessoies, St. Cyr, and Louis, who had defended the liberal continuation of the charter, resigned; Pasquier, Latour-Manau, and Roy succeeded them, and Decazes became prime minister. Decazes, with de Serre and Portalis, concurred with the views of the moderate right side, since the liberal party went too far for them in their demands. The new ministry was as violently attacked by the ultra royalists in the chamber (the extreme right), on account of its moderation, as by the liberals (on the extreme left). The administration had carried several measures, in opposition to the provisions of the charter, by the second ministry (Richelieu and Laine), the object of which was to overcome the opposition of all parties. Among them were the severe measures against constructive offences, and the censorship of journals and periodical writings on political subjects. Hence the continued disputes of the liberal journals (the Miroir Francais, the Bibliothèque Historique, the Censeur Européen, &c.) with the ministerial papers, among which the Journal des Débats was the most distinguished, and with the papers of the ultra royalists, the Quotidienne, the Conservateur, the Drapeau blanc, and others, which attacked the charter itself. Able writers, such as Benjamin Constant, Comte, and Delécluze, were confined, and finally, Fievez, and Chateaubriand for the ultras. As writers often understand the laws differently from the judge and the crown advocate, fines and imprisonments were often the share of those who wrote on the liberal side. The prevalant courts were abolished at the close of the session (1818), and crimes, which, till then, had been under their jurisdiction, were again subjected to the jurisdiction of the assisses. The driot d'abaine (see Abainé), which had been restored by Napoleon, was abolished in 1819. While this secret reaction of the adherents of the old system (among whom the theocratic party, or the pes, who aimed at the restoration of the ancient feudal system—the three estates with their privileges, the parlements, and les lettres de cachet. A gouvernement oncelle was maintained, under the direction of baron Virolles, to forward the views of the ultras. Some officers of state (officiers de grande allure) contributed to the administration of criminal justice suffered great abuses, and the administration of the criminal justice suffered great abuses, and was by no means in accordance with the provisions.
FRANCE.

of the charter, in favour of personal liberty. (See Berton’s Observations critiques sur la Procedure criminel- le d’après le Code qui régît la France, and Berenger, De la Justice criminelle en France, Paris, 1819.) The charter had abolished the penalty of civil death, which had been imposed by the law of November 9, were equivalent to actual confiscations. Close confinement (le secret) was a kind of moral torture, which often lasted for years, before an innocent individual was set at liberty. In the prisons, condemned criminals were confounded with those who were merely confined for trial, or sentenced to imprisonment; the dregs of the people with men detained for political offences. It was also a source of discontent, which existed till the final banquet of the Bourbons, that the nation was not permitted to choose a single magistrate. All officers were appointed by the government, and the councils of the departments declared the wishes of the nation in the name of their departments, without any authority from them, so that their voices were often opposed to the opinion of the majority in the departments. Even the national guard, which was the instrument to elect its officers, was not everywhere composed of proprietors, but often arbitrarily formed of persons without a residence, and without property; so that, in several departments, it was merely an armed instrument of a party. This was the reason that so many outrages against the Protestants escaped unpunished in different parts of France. In reading the work of Aignan, member of the French academy, De l’Etat des Protestans en France depuis le seizième Siécle jusqu’a nos Jours, 1818, we find ourselves transported back to the times of the dragonades. Government at last put a stop to their outrages; but the murderers were left unpunished.* The recruiting law of St Cyr, which restored equality in the military service, was particularly odious to the friends of aristocratic privileges. The nobility complained of persecution, while the state calendar proved that they held seven-eighths of the prefectoral and the most important mayoralities! They were at the head of the military divisions, of the legions, of the gendarmerie, of the tribunals, of the embassies; and were even to be found in the financial department! Hence the complaint, that civil equality did not exist in France, and that the executive power was in the hands of a certain class of men who had possessed, and perhaps lost, privileges. In addition to this, the accusations of sedition and treason, the conduct of the missionaries, and the intrigues at the elections of the deputies, inflamed the passions of the people.

The legislation and administration, sometimes more and sometimes less influenced by the constitutional system, are the most important subjects of the domestic history of France. The external policy of France, in the modern European system, was in union with the internal change. While strict monarchical principles were gradually gaining strength and influence in all departments of the domestic administration, the French cabinet entered more and more deeply into the continental system of the great European powers. The accession of France to the holy alliance, at the congress of Aix-la-Chapelle (1818), engaged the government in a policy, the tendency of which was to bring the constitution and administration of the country more into accord- ance with the absolute principles of the system of stability, as it was called by the sovereigns. The left side in the chamber of deputies, however, struggled to obtain a liberal ministry; while the government ministry, which was supported by the moderate royalty, and was supported by the majority of the extreme right. The election laws were found too favourable to the liberal party, and the ministry therefore proposed a new election law, for the purpose of giving the richest land-holders the preference in the elections of the deputies; and, at the same time, some laws of exception, relative to personal liberty and the liberty of the press (which had been provided for only a short time before, June 9, 1819), for the purpose of checking the expression of public opinion.

Under these circumstances, the session of 1819 (from Nov. 29, 1819, to July 22, 1820) was agitated by the most violent conflicts. The influence of the royalists was manifested in the exclusion of Grégoire from the chamber, although they did not succeed in having him pronounced unworthy of a seat. The second and third parlements of the minis- terial, and Decazes, the president of the ministry, had already proposed several bills (projet), calculated to gain over the moderate of both sides to the ministry, when the bloody act of a political fanatic (Feb. 13, 1820), the murder of the duke of Berry (see Lowed), astonished the whole nation, and drew with it the most vitriolic accusations from the extreme right. M. de LABOURDONNAYE called upon the chamber to use all means for the suppression of doctrines equally dangerous to the throne and to humanity. The right side was particularly violent in its attacks on Decazes. He brought forward the projet of a new law of election, and of two laws of exception; but, finding that he had lost the majority, he resigned, Feb. 18. The duke of Richelieu, who was proposed to the king by Decazes himself, succeeded him as president of the ministry (Feb. 20, 1820), and count Simoné as minis- ter of the interior—(the fifth ministry). The contest concerning these three projets terminated in the triumph of the absolutists over the liberals; and their influence was soon perceptible in the legislation and administration. The power of the ministry was gradually increased by the eloquence of Deserse, and (after 1820) by the talents of Villèle. The first law of exception, and the second law of exception, and of the ministry (March 26, 1820), gave the ministers the power of arresting any individual, on a mere suspicion of treason, by an order signed by three ministers; the person so arrested was to be brought to trial within three months at the farthest; the law was to continue in force only until the close of the ensuing session. The principal or- diers of the opposition in vain maintained that the existing laws contained sufficient provisions against seditions designs. The second law of exception, of March 31, 1820 (loi sur la publication des journaux, écrites périodiques, dessins, &c.), restoring the censor- ship, was contested with still greater violence. Both parties were dissatisfied with it. The left side re- minded the ministry of the want of laws regulating the local administrations, the national guard, the jury, &c. Some distinguished members of the centre, who defended a consistent maintenance of the principles of the chartes (hence called the doctrinaires), and already opposed the ministry, came over to Decazes, and co-operated more or less with the left side. On this account, the centre was now dis- tinguished into the left centre and the right centre; the latter being occupied by moderate royalists of the ministerial party. But Deserse and Villèle still commanded a majority of votes in both cham- bers. The law establishing the censorship, which,
was to remain in force only till the close of the session of 1820, had a great effect on the journals; for, as the censorship was exercised with rigour against the liberal papers, these were deprived of much of their influence. In the approach of the election the new law of election, June 29, 1820, was carried, after the most violent opposition on the part of the doctri-
naires and the liberals, in both chambers. (See Elections.) The first consequence of this new law of elections was, that in 1820, of 220 new deputies, only about thirty were liberals; in 1821, two-thirds of the eighty-seven new deputies joined the right side; the remaining third belonged partly to the centre, partly to the left side. Many officers of government, by their writings, and in their places as deputies, opposed the new system; so that with every new ministry there were numerous discussions, and many names were even erased from the army-rolls for political opinions. August 19, 1820, a number of officers and$subalterns were arrested for an attempt to excite the troops in Paris and other places to revolt; the pre-
tended author, captain Nantil, had fled. This was a case of treason, to be tried by the chamber of peers, as the supreme tribunal for such crimes; and on this occasion it was maintained, that this chamber has the power to decide, whether a case comes under its cognizance or not. In the present case, the chamber considered the accusation proved, and condemned three absent persons to death and six to fine and imprisomnent; the rest were acquitted. The exaggerated fears of the government were shown in the case of the conspiration de l'Etat, all the persons accused being acquitted. On the opening of the session of 1820 (from Dec. 19, 1820, to July 31, 1821), Lainé, De Villele, and Corbière were appointed to Dec. 20, ministers-secretaries of state, with a vote in the council of ministers, but without any department in the administration. The ministry hoped to command the right side by means of these speakers, but the ultras were soon found to be opposed to the minis-
ters. Count Donnadieu, Delaët, and Count Vaublanche headed this opposition. Both parties seemed to unite with equal zeal for the overthrow of the mini-
stry. The left side principally attacked the influ-
ence of government in the electoral colleges; but the right side continually maintained the majority; and the chamber, in the address to the king, expressed a wish to see the ministry (which was principally religious and monarchical system of education. They asserted, that a continual conspiracy existed in France; of which they reproached the opposition with being the cause—an accusation which gave rise to the most violent debates, and bitter recriminations; whereas the liberals (as Benoît Constant once ex-
pressed it, at the close of his celebrated speech on the election law) really desired "les Bourbons, rien que les Bourbons avec la charte, toute la charte sous les Bourbons."

The most important debates were on foreign relations, and freedom of speech in the chamber. On the latter subject, Royer-Collard developed the views of the opposition in the most convincing manner. But Deserre, the keeper of the seals, succeeded in carrying certain restrictions on the conduct of the members, intended to check the violence of parties in the chamber. Several laws, relating to domestic affairs, and the settling of the budget in particular, gave occasion to profound discussions of great political principles. The censorship was continued after March 31, 1820. The ministry, however, withdrew its projet of a law regulating the organization of the municipal and departmental administration (which had been repeatedly demanded by the left side and the centre), because it was opposed by all parties. Shortly before the close of the session of 1820 (July 31, 1821), the ministry was divided, partly on general views, and partly on the question as to the share which the ministers who held no portfolio should take in the administration. Villele and Corbière, there-
fore, gave in their resignations, which was the alienation of the right side from the ministry. The ministers were, notwithstanding, so confident of their stability, that they lasted the opening of the session of 1821, for the purpose of fixing the budget of 1822, before the close of the year, as long as their usual period for the supplies for the half year in advance, without examining the estimates. At the same time, the ministers aimed at maintaining their influence with the majority in the chambers, by pursuing a moderate system; and the censorship, therefore, was directed with more severity against the journals of the anti-constitutionalists.

But the new system increased the number of the ultra royalists, while it diminished the strength of the left side and the centre. The session of 1821 was opened on the 5th of November. The members of the right side were elected in the provinces, in order to obtain a majority. They were the speakers and the reporters of the committees of the chamber. Both sides were equally discontented, although for different reasons, with the policy of government in respect to Naples and Piedmont, as displayed in the three days' congress at Lignano. The ministry retired to the king (November 26), which touched on this point, gave offence, and, instead of being presented, as usual, by a great deputation, only the president and the two secretaries of the house were admitted; and it was censured by the king in his reply. The keeper of the seals, Deserre, proposed two bills, one for continuing the censorship till the close of the ses-
sion of 1826, and the other imposing additional restrictions on the liberty of the press. They were received by both sides of the chamber with a decided opposition. The ministry, unable to resist the com-
bined attack of both parties, and not daring to dis-
solve the chambers, gave in their resignations, Dec. 17, 1821. The sixth ministry was now formed, consisting of Peyronnet, minister of justice, the viscount de Montmorency, of foreign affairs, the duke of Bel-
luno (Victor), of war, Corbière, of the interior, the marquis de Clermont-Tonnerre, of the marine, and Villele, of finance. The left side was discontented, the right side satisfied itself, and the left formed but a feeble opposition. The new ministry immediately withdrew the proposition for a continua-
tion of the censorship, which, therefore, expired, Feb. 5, 1822. But the trial of all offences of the press was taken from the jury, principally through the influence of the lawyers of the right centre. As it was now too late to discuss the budget of 1822, a provisional supply for three months was granted. The change in the ministry had no bad effect upon the public credit; but the dissatisfaction of the democ-
ratic party was displayed in the provinces. In 1821, a conspiracy in favour of the young Napoleon was discovered, and, in 1822, several projects of revolt in different garrisons, two of which, conducted by general Berton and colonel Carron, actually broke out, but failed. The missionaries also caused some trouble in Paris; and several seditions acts of the students were punished by the suppression of the medical faculty (restored, with a new organization, in March, 1823) in Paris, and the prohibition of all lectures on modern history, natural law, and intellec-
tual philosophy. At the same time some of the departments were subjected to numerous arrests. These events provoked the fanatics, (as the ultra-
royalists were called) to the most violent attacks upon the liberals, who boldly maintained, that the results
of the revolution were beneficial for France. But as the left side was constantly growing weaker, and their speakers were often called to order, they finally resolved not to vote any longer. In the chamber of peers the opposition also declined; and, they resolved that no peer could be arrested on account of civil suits, although all Frenchmen were denounced by the charter to be equal in the eye of the law. The stormy session of 1821 finally closed May 1, 1822.

The elections of the new deputies were managed almost entirely by government. Villèle even published a circular letter, requiring all electors, who were public officers, to vote for the ministerial candidates. Although the opposition prevailed in Paris, yet only thirty-one out of eighty new deputies were liberal. The session of 1822 was opened by the king, in the hall of the Louvre, June 4, and continued to August 17. On the 11th of June, the minister of finance, Villèle, declared, that the grant of the provisional supply, which had been necessary for the last nine years, would now cease, as he was ready to open the session. The minister of finance also gave him such an influence in the administration of affairs, that, on the 4th of September, he was appointed president of the ministry. He also exerted a great influence upon public opinion, through the ministerial journal, the Journal des Débats, or the newspapers, satisfied with his moderation. He neither did all that they wished, nor did he act with sufficient promptitude for them. Villele, like every other French statesman, as soon as he had reached the highest step of the administration, from which he could survey all the relations of the country, under-stood that France could no longer be governed as an absolute monarchy; and that, if the attempt were once made, an abyss must open between the nation and the throne, into which the minister who should make the trial would be the first to fall. Corbière, minister of the interior, then agreed with these views of Villèle. The most important acts of the session of 1822 related to the new tariff, which, conformably to the prohibitive system of Britain, and of some of the continental states, laid new restrictions upon commerce. The foreign policy, in relation to Greece and Spain, was also the subject of several warm debates. In July, a delved law for the establishment of the revenue law above mentioned, with the adoption of which the session closed. On the trial of Berton and the other conspirators, before alluded to, the attorney-general of Poitiers had attempted to implicate the deputies Lafitte, Keratry, Benj. Constant, and general Foy, as accomplices. He was therefore accused by them as a libeller; but he was protected by his office, and Benj. Constant was condemned to a heavy fine, on account of his severe remarks on the attorney.

The contest now approached its decision by the general defeat of the liberal party, on the great question, Shall France suppress democratic principles in Spain by force? The king opened the sessions of 1823 (closed the 9th May, 1823), on the 28th January, with a speech announcing the march of 100,000 French troops to Spain, for the purpose of reconciling that kingdom with Europe. Of fifty-one deputies, who were sent to the Spanish ministry, forty-five, and among them Benj. Constant, had not been re-elected; and the opposition was entirely without influence. Villele, who did not unconditionally favour the war, not being able to agree with the duke de Montmorancy, minister of foreign affairs, concerning the note to be sent to the Spanish minister; forty-five, and, fortune to obtain the approbation of the king; upon which the duke de Montmorancy resigned his place, and was succeeded by the viscount de Chatelaurian.

In the latter part of the session, the bills for the budget of 1824, the loan of 100 millions for the extraordinary expenses of 1823, the calling in of the veterans, and the debts of the realm, were proposed; and, the bills, proposed by the minister of finance, were adopted.

As the declaration of war was a prerogative of the crown, the chambers could only consider the policy of a war with Spain during the discussion of the extraordinary credit of 180 millions. The peace story, the opposition, was composed of the ablest and most experienced men. Manuel, the deputy of Vendée (who, in the former session, had spoken of the repugnance of France to the Bourbon), by some allusions to the danger to which Ferdinand was exposed by the invasion of the country by foreign troops, drawn from the history of the French revolution, exasperated the right side to such a degree, that they voted (March 3) his exclusion from the present session, without allowing him to make his defence, and in violation of the rules of the chamber. Manuel, nevertheless, took his seat in the house on the 4th March; and the members, who supported him, were forcibly dragged from the chamber by the gendarmes. The left side, with the exception of a few members, quitted the house; those who remained, with several of the left centre, declined voting; sixty-two members presented a formal protest against the exclusion of Manuel. There was an indignation meeting in the right centre in favour of peace; but the extreme right, or the party of Labourdonnaye, continued to attack Villele, the president of the ministerial council, and Labourdonnaye publicly declared his dissatisfaction with the charie, and with the neglect to restore the national domains to the emigrants. In the discussion of the budget of 1824, in which the estimated expenditure amounted to 900 millions, the report attributed the greatness of the sum to the revolution, which had swallowed up the estates of the church, leaving the clergy to be paid by government, had consumed the funds of charitable institutions, now to be supported by the state; created a great number of officers, which could only be diminished gradually; lost the greatest part of the colonies, those which remained costing 6,000,000 francs more than they yielded; and finally augmented the public debt 100,000,000 in rentes since 1788. The war began, the negotiation of Spain, the triumph of the Bourbon; the monarchical principle was established; the Bourbons acquired a little popularity with the army; and this expensive campaign of six months was thus of some importance in strengthening legitimacy. Baron Dumas had succeeded the duke of Della, as minister of war, in the beginning of the war. The session of 1824 was opened March 23; the number of leibins was reduced from 110 to seventeen. A supply of 107,000,000 francs for the extraordinary expenses of 1823 was granted, and the bill providing for the septennial election of deputies was adopted. The Spanish war had cost 207,827,000 francs. Spain had stipulated for the payment of only 33,877,700. To meet this exigency, Villele brought forward a proposal to reduce the rentes from five per cent. to three per cent., which was adopted by the deputies, but rejected (3d June) by the peers. Chatelaurian, for resisting to defend the bill (August 4), the government renewed the censorship of the public journals, chiefly through the influence of count Frayssinous, bishop of Herno.
and grand-master of the university, who had been intrusted with the control of public affairs. Louis XVIII, died the 10th September, and his brother, Charles X., ascended the throne. The king declared his intention of confirming the charter, appointed the dauphin (duke of Angoulême) a member of the ministerial council, and suppressed (Sept. 29) the censorship of the public journals. The count de Clermont-Tonnerre was appointed minister of war; the duke Dondeville, minister of the royal palace; and baron Damas, minister of foreign affairs. Villèlle secured the confidence of the king, by his prudent administration, and by his concessions to the aristocracy. He renewed the loans and continued, by his organ, the Journal des Débats, to be a most eloquent opponent of his measures.

In the session of 1825 (from Dec. 22, 1824, to June 13, 1825), the triumph of Villèlle was complete. The bill for the indemnification of the emigrants, by granting 1,000,000,000 francs in rentes, as an indemnity for their estates, the proceeds of the sale of which had been deposited in the public treasury, and that for the reduction of rentes, now passed. Both measures were loudly condemned by the nation, which became more and more opposed to the policy of the government. The passage of the bill for the suppression of sacrifice (the profanation of sacred places and utensils) with death. The civil list of the king was fixed at 25,000,000 annually, for life; the appanage of the royal family at 7,000,000. The duke of Orleans received the title of royal highness. Immediately after the acceptance of the budget for 1826, the splendid coronation of the king, Charles X., took place (May 29) at Rheims, according to ancient custom, with the addition, however, of the oath of the king, to govern according to the charter. The king had already acknowledged the independence of Hayti, by an ordinance of April 17, 1825. Commercial intercourse with the Spanish American republics was also permitted, but without a recognition of their independence, to which Spain refused to accede. A preliminary treaty of commerce was concluded with Great Britain, and a treaty of commerce and amity with the empire of Brazil (Oct. 4, 1826). In the session of 1826 (opened Jan. 31st, and closed July 6th), the ministry was strengthened in the chamber of peers by the nomination of thirty-one new peers. The bill establishing the right of primogeniture and entails (substitutions) was passed, however, only after the king had expressed his disapproval. The bill creating a new aristocracy, in which the nation discerned the foundation of a new aristocracy, and the destruction of a legal equality of all citizens. It was rejected by the peers on the 8th April, 1826. The public attention was most attracted by the trial of Ouvrard. When the French army, in the Spanish campaign, had reached Bayonne, the duke of Angoulême found the supplies of food and clothing deficient. In this emergency, Ouvrard stepped in, and, by large advances of money, saved the army. The terms of his contract were exorbitant, and he succeeded in effecting it by extensive bribery, which, however, was not the only shameful part of the transaction. Double rations were drawn for 100,000 men, because the troops, whilst employed in the Spanish war, still remained on the rolls at home, and the allowances for pay were made in the same ratio. This was one of the causes of the exorbitant expenses. The number of Spanish prisoners stated in the American Annual Reg., at 397,000,000 fr. ; in the German Cons. Lex. at 307,827,000. Villèlle, on the first report of the business, had Ouvrard arrested; but he soon repealed this step, when Ouvrard was tried by the cour royale, and then by the peers, and finding the measure of empire being more fraud apparent, and the more persons were found to be implicated. At length the ministry induced the peers to give up the trial without convicting the peers implicated; but this step was taken too late to conceal from the nation a scene of detestable abuses. An effect not unlike this was produced by the count Montlosier's denunciation of the Jesuits, who were re-establishing themselves in France, contrary to law. (See Jesuits, and Ultra montanists.) The court of appeal, at Paris, declared itself incompetent to decide on this subject; but the abbé de la Mennais was condemned and punished for his attack upon the privileges of the Gallican church, as established by the declaration of 1802.

On Lafayette's return from America in 1825, the citizens of Havre having received him with some demonstrations of joy, the government manifested their resentment by ordering out the gendarmes, who charged the multitude with drawn sabres. The influence of the Jesuits was seen in the prosecution of the Constitutional and Courrier Français, two of the best liberal journals. Villèlle, who had discernment enough to see to what this fanaticism would lead, and who was, at the same time, obnoxious to the liberals, on account of his anti-constitutional principles, and his operations in the funds, became less and less secure. The parties assumed a more hostile attitude towards each other. The royalists and the supporters of the Jesuits became more open in the expression of their real sentiments; the liberals became stronger and bolder; and the government assumed more and more the character of an institution supported by force and intrigue, and not forming an integral part of the nation. The state of Portugal, South America, and Greece, contributed to increase the agitation. The session of 1827 was opened December 12, 1826. Damas, minister of foreign affairs informed the chamber that all the continental powers had endeavoured to prevent the interference of Spain in the affairs of Portugal; that France had cooperated with them, had withdrawn her ambassador from Madrid, and had entered into arrangements with Britain to leave Portugal and Spain to settle their affairs in their own way. M. de Montlosier presented a petition to the chamber of peers, praying that the laws against the Jesuits might be put in force. After a violent discussion, the petition was referred to the president of the council of ministers. A popular triumph, of greater importance, was the result of the discussions concerning the liberty of the press. The bill for the impairment of the press, by a majority of 283 against 134, in the chamber of deputies, but the majority of the peers being found to be opposed to it, the project was withdrawn by an ordinance of April 27, 1827. Paris was filled with rejoicings. Illuminations, fireworks, &c., testified the triumph of the opposition. This event was followed by the disbanding of the national guards of Paris, a body of 45,000 men, who, at a review (April 29), in the Champ de Mars, had joined the cries of hatred against the ministry. This was a highly unpopular measure. Lafitte, Benjamin Constant, Casimir-Perrin, and two other members, declared themselves ready to impeach the ministers, during the discussion of the budget for 1828. Villèlle, however, took credit to himself for having ventured on a step which he knew to be unpopular, but considered necessary. The supplies for 1826 amounted to 485,940,360 francs, and for 1827, 519,365 francs. Villèlle congratulated the nation that there should be an excess, after many extraordinary expenses. M. Hyde de Neuville, formerly French minister in the United States, having accused the French ambassador at Madrid of communing in the numerous reports, the English ambassador in London was immediately struck from the roll of ambassadores.
bassoneurs en disponibilité. But the rigorous censorship of the press, established by an ordinance of June 24, was much more ominous than any previous measures of the ministry. The opposition papers sometimes appeared with whole columns blank; a thousand ingenuous contrivances were invented for expressing free opinion, and the liberal spirit became the theme of other means of attack. Some oppositions appeared, about this time, by the assault of the marquis de Maubeurre on the grand chamberlain, Talleyrand. The marquis knocked him down by a violent blow on the face, in the presence of the court, and alleged, as a reason for his conduct, that he had been compelled by Talleyrand, at the time of the first restoration, to assassinate Napoleon, and to waylay the wife of Jerome Bonaparte, in order to obtain possession of the crown jewels.

Having succeeded only in the latter enterprise, Talleyrand refused the promised reward, and punished his complaints with an imprisonment of six mouths. The story appears to have made little impression on his judges, and he was fined and imprisoned for five years. The interment of Manuel, who died August 20, at the country house of Laftte, was a new cause of irritation. Laftte was refused permission to remove the body to his house in Paris, and to follow it up to the grave; he therefore suggested that the funeral procession should proceed directly to the cemetery of Père Lachaise. The police eagerly accepted this proposition, in order to prevent demonstrations of popular feeling and respect, similar to those which had attended the funeral of general Foy. The procession arrived, towards noon, at the gates of Ronle, where an immense number of people had assembled. The people took out the coffin, and carried it upon their shoulders, but were finally prevailed upon by the gendarmes to allow it to be put back into the hearse; from which, however, they unlashed the horses, and drew it themselves. New bodies of gendarmes now appeared in one of the boulevards, with another funereal car drawn by four horses, into which they insisted on removing the coffin. A compromise was finally made, and two horses were slightly harnessed to the car, whilst the people continued to draw it. Lafayette delivered a short speech to the guards. The people dispersed without further disturbance. During this year, France was obliged to agree to accredit the agents of the southern republics of America, as Mexico and Colombia would not consent to the half-way measures by which the French government wished to obtain commercial advantages, without compromising her adherence to legitimacy. Early in the summer, war broke out with Algiers, but was carried on with little spirit. It arose chiefly from a controversy respecting a debt due the Algerines for corn purchased on account of the French government, in 1793.

While was not so blind as not to see that the ministry was losing ground. He, therefore, determined to dissolve the chamber, which had still three years to run. This he did either because he expected to obtain a majority by a new election at this time, of which there might be less chance three years later, or, since he really wished to throw himself upon the nation, and receive his sentence from its decision. In Paris, out of 8000 votes, only 1114 were for the ministerial candidates; the rest were for the liberals, Dupont-de l'Eure, Laftte, Casimir-Perrier, Benj. Constant, De Schonen, Ternaux, Roit-Collard, and several others. The election took place in the departments, and a majority of the chamber was liberal. This result occasioned the greatest joy in Paris, and caused some disturbances, in which nearly fifty persons were killed by the gendarmes.

The ordinance which had dissolved the chamber had been accompanied by measures, dated November 5, 1827, creating seventy-six new peers—an act certainly unconstitutional in spirit, although the right of the crown to create new peers is not limited by any precise rule. Among the list, we hardly find one, except Souli, who could be considered entitled to the honor of being created a peer. On February 4, 1828, when the ministry was partially dissolved, the number of Villèle, Peyronnet and Corbière were added to the number. The seventh ministry was now formed. Count de la Fermonay, late ambassador to St Petersburg, was created minister of foreign affairs; count Potier, Marshal of France, against the results was not forgotten by the liberals, keeper of the seals of justice; M. de Caux, minister of war; M. Martignac, minister of the interior; count Roy, minister of finance. The department of commerce was erected into a separate ministry, and assigned to M. St Cricq, who had been for several years at his head, as director-general of the customs. M. de Chabre, minister of the marine, who was said to have opposed the dissolution of the national guards, remained in the new ministry, as did, likewise, count de Frayssinou, minister of ecclesiastical affairs; but the department of public instruction was taken from this minister, and assigned to a new minister of instruction, to which M. de Vaisineau was appointed. The session was opened February 5, 1828; and the king, in his speech from the throne, congratulated the nation on the victory of Navarino. The new peers were received without any question respecting the legality of their creation. The chamber of deputies was so equally divided, that the balance of power remained with a fraction of about thirty members detached from the right side. Royer-Collard was chosen president of the chamber by the king, from the five candidates presented to him. The king, in this instance, deviated from the custom of selecting the candidate who had the majority of votes. Before the discussions respecting the answer to the king's speech took place, Chabrol and Frayssinoz, the two members of the Villèle ministry who had remained in the cabinet, resigned their posts, and were succeeded by Hyde de Neuville and Pendent, bishop of Beauvais, who resigned several others of the same vacancy multitude, the king put them aside, and the liberal party gained new strength by supplying the vacancies. A proposition of M. de Cony, to subject all members of the chamber accepting office to a new election, was passed, after some warm debates, by a vote of 144 to 133, but was rejected by the peers, by a vote of 210 to 41. The discussions on the abuses in the post offices, and the existence of a cabinet noir, where all suspected letters were opened (as is the case in many countries in Europe), were also animated. A salutary law, providing for the annual revision of the jury and electoral lists, was passed, and many abuses connected with them, which had grown up under the late ministry, were exposed. A committee was appointed to inquire whether there were grounds for impeaching the late ministry for peculation and treason; but, as they had not the power to send for persons and papers, they reported “that there was occasion for procuring further information respecting the accusation of treason, that had been advanced against the late ministry.” The consideration of this report was deferred till after the discussion of the budget, which virtually amounted to abandoning the impeachment. The clergy were dissatisfied with the ordination of a new nonconformist minister, and should henceforth be intrusted with the charge of schools, and with instruction in any house of education, unless he declared, in writing, that he did not belong to any religious congregation, not legally established in
France, which was chiefly directed against the Jesuits. They pronounced this law to be a conspiracy against the clergy, and M. de Porte, the French minister at Navarino, declined the offered portfolio, and M. d'Haussey, prefect of the Gironde, and a deputy of the right side, was named in his place.

The ministry was decidedly ultra-royalist. Bourmont had served under Napoleon, who, to secure for Louis XVIII., had again taken office under Napoleon, whom he desirous of the field of Waterloo, fled to the Bourbons, whom he joined at Ghent, had been created a peer, and commanded the army of occupation in Spain, after the return of the duke d'Angoulême. Prince Polignac was completely identified with the ancient régime. A few days after his birth, to the people and fortunes of Charles X., Polignac was, in his religious and political sentiments, a royalist.

He and his brother Armand were implicated in Pichegru's conspiracy, but were pardoned by Napoleon. Since 1823, he had been ambassador at London, and always showed a great predilection for England, without entering at all into the liberal spirit of her institutions. It was also suspected that he owed his elevation to British influence, and particularly to that of Wellington; and, as the prince had no re-deeming qualities, the majority of the nation at once pronounced against him. The deputation of the minister of the interior, was next in importance to prince Polignac. He had always been one of the most active and violent members of the extreme right. As soon as the ministry was composed, the question arose, whether it was to procure a majority in the chamber. La Bourdonnaye proposed to try the dangerous policy of Villiére, to dissolve the chamber, and to procure a majority in the new elections by the active and united exertions of the royalists, using, of course, all means in the power of the ministry. But this proposal was not adopted by his colleagues, and, in fact, there is no doubt that they would have been entirely baffled, although the clergy would have done every thing in their power to secure the victory to Polignac. The rejection of this proposition, and the creation of prince Polignac, president of the ministerial council, induced M. la Bourdonnaye to resign. Baron Moutbel, who had been elected a member of the chamber by the congréganistes of Toulouse, was transferred to the department of the interior, and M. Ranville, distinguished at Caen among the agents of the re-action of 1815, was made minister of ecclesiastical affairs and public instruction. Thus was the ministry constituted at the end of the year 1829.

Let us pause to take a survey of France, before we enter on the memorable year 1830.

Though the Bourbons had endeavoured to build up an aristocratical and absolute monarchy, many of their measures had the contrary effect. The nobles had ceased, in France, to form an aristocracy. Their great numbers and little wealth; the mixture of political elements they present,—the noblesse of the ancien régime and of the imperial dynasty, the one the offspring of feudalism, the other of the revolution,—the soldier of Condé, and the officer of the republican army, who encountered him in the field; their total want of any political privileges;—these, with some other circumstances, had left the noblesse entirely without consequence. Even the peers did not contain many aristocratical elements. One of the measures of the last dynasty, the measure of the tax imposed upon themselves, was the allowing only those to vote, and to be eligible to office, who paid the highest taxes. As the nobility were not rich, it very often happened that barons and counts could neither be eligible nor even electors, while rich manufacturers, bankers, &c., enjoyed these privileges. Those
very persons whom it was the great object of the government to exclude from the legislature, were the persons who paid the highest taxes, and who, consequently, were electors, and frequently were elected. The Bourbons did not understand France, and had gradually alienated the nation; the latter knew the sentiments of the Bourbons; they knew what they had to do, and how to act. The new ministry, and were determined, from the beginning, not to tolerate their illegal projects. The general condition of the people, at this time, was prosperous; commerce and manufactures flourished; and the question was often asked, Of what do the French complain? Have they not all they desire? Is not their happiness secured? This was the way to refute those who consider the physical comforts of a people as the sole standard of the goodness of a government or of the condition of a nation. It is one of the best points in the struggle of the French nation, that, though they were, physically, in a flourishing state, they yet spared no exertion, and were willing to shed their blood, to establish principles which they held dear. Prince Polignac was not the author of the troubles which ensued. Without denying his guilt, we think that the Bourbons must, sooner or later, have come to open war with the principles of the nation. All was an incorporation of the "nation," with the nobility of the Bourbons, whether tried in vain, in all possible shades of ministries; it remained only to declare open war against the nation. But the war was resolved upon without a calculation of the relative strength of the parties.

1830. March 2, the speech from the throne announced that war had been declared against Algiers on account of the insults offered to the French flag (the day had also struck the French consul at a public audience, on receiving an answer in the negative to his question whether the debt above-mentioned, due from France to Algiers, had been settled); that active negotiations were on foot to effect a reconciliation between the members of the Braganza family; and that the revenue of 1829, though less than that of the preceding year, exceeded the estimates of the budget. The speech ended with the following words: "Peers of France, deputies of the departments, I do not do you the good I desire to do. You will repel, with contempt, the perfidious insinuations which malevolence is busy in propagating. If guilty intrigues should throw any obstacles in the way of my government, which I cannot and will not anticipate, I should find force to overcome them, in my resolution to preserve the public peace and the just confidence I have in the French nation, and in the love which they have always evinced for their kings." The funds fell as soon as the speech was made public. There was a considerable majority in the chamber of deputies against the ministers. Royer-Collard was re-elected president. When the dayen d'âge (see Desta) gave up the chair, he addressed the president by the term citizen, which excited a great sensation. On the 18th of March, the usual Debates of the chamber, with the president at their head, presented to the king the answer of the chamber. The address declared, in a frank but respectful tone, that a concurrence did not exist between the views of the government and the wishes of the nation; that the administration was actuated by a distrust of the nation; and that the nation, on the other hand, was agitated with apprehensions which would become fatal to its prosperity and its repose. "Surely," continued the address, "France does not wish for anarchy any more than you wish for despotism." Never was a more firm, yet prudent warning given to a king. The king replied, by expressing his regret that the concurrence which he had a right to expect from the deputies of the departments, did not exist; he declared that his resolution was fixed, and that the ministers would make known its intentions. The peers had answered on the 10th, by a mere echo of the speech from the throne. Chateaubriand's discourse on this speech was a bold attack on the ministers. The two chambers were immediately consulted for the new ministry (9th), to receive the communication from the government, when the chambers were declared to be prorogued until September 1, the same year—a measure which produced great excitement throughout France.

The journals became more active than ever. The Jesuitical and Jacobin clubs were worked in their veins, and praised the ministry for its firmness, whilst the liberal papers began to predict the events which have since taken place. They were conducted, in general, with great decorum, whilst the ministerial journals were filled with abuse and reproaches of their opponents, whom they denounced as traitors and enemies of the throne. To the hatred of the liberals against Polignac and his colleagues was added contempt for his imbecility. A society was formed in Paris for the purpose of printing journals in such departments and districts as were destitute of them, and removing the impediments to their publication occasioned by the ministerial journals; they lend their presses to parties opposed to the measures of government. In Brittany an association was formed to refuse the payment of taxes not regularly granted by the chamber of deputies. The members of this association agreed to assist each other in case of prosecution. The association was denounced, but was acquitted by the cour royale at Paris. Two hundred and twenty-one deputies had voted for the answer to the king's speech, and 181 against it. The names of the 221 were printed in hand-bills; the number 221 was seen on snuff-boxes, &c., and un des 221 soon became an honourable title. Benjamin Constant, however, declared himself, in the Gazette de France, against the answer. Government prohibited the sale of the snuff-boxes, &c., and published a list of prefects, dismissed or transferred to other departments; purified, as the ministerials called it, all branches of the administration; appointed the most servile and servilest judges to prosecute the journals (as the Globe, National, &c.), and men of letters, many of whom were national favourites, and continued, though in the minority, to treat their opponents as traitors, and deliberately insulted the nation.

April 11—At the request of Villèle he had a long interview with the king, and the papers asserted that negotiations were on foot to recall him to the ministry. Prince Polignac seemed to have become more violent in proportion to his weakness; and it would seem as if schemes of vengeance had mingled with his absurd ideas of governing France. The anniversary of the entry of Charles X (then count d'Artois) into Paris, in 1814, was celebrated April 13. All the public bodies made flattering speeches, and received gracious answers, and all the hollow pageantry of monarchy (of a very different complexion from what was soon to follow) was displayed.

We have already mentioned the difficulties which existed between the king of France and the devil of Algiers, and the.intimation, in the king's speech, of his determination to take effectual measures on this point. A war with Algiers could only be agreeable to the administration. The same reason which was one of the inducements to the war with Spain—the desire of making the army familiar with the name of the Bourbons, and the drapé blanc—still existed. But there were many other reasons which rendered a war, with a reasonable probability of success, particularly desirable for the ministry at this moment.
It enabled them to assemble an army, which, in case of necessity, might be used at home, and, even if it were not immediately put into the field, the military organization might be useful for their purposes. A war of this kind would, the partisans of the ministry hoped, divert the public attention, and victory would at once render them popular with a nation so enthusiastically fond of military glory. In both calculations, the ministry, as we shall see, were grievously mistaken. Count Bourmont, the minister of war, was appointed commander-in-chief of the expedition, and Admiral Duperré, the commander of the fleet. April 20, 1830, the Moniteur stated the reasons for the war to be, that the dy had raised the ancient tribute of 170,000 pounds per annum, and that it amounted, if 200,000 francs; that, though this sum was duly paid from 1820 to 1826, the dy had been unfavourable to the French interest, insulted the French flags, and struck the French consul, &c. May 10, the army, consisting of 37,571 infantry, and 4000 horse, embarked at Toulon, and the fleet, consisting of ninety-seven vessels, of which eleven were ships of the line and twenty-four frigates, set sail. June 14, at four o'clock, the army began to disembark at Sidi Ferrajah, on the coast of Africa.

May 17, the royal ordinance dissolving the chamber was promulgated. At the same time, new elections were ordered, and the two chambers convoked for August 3. The Moniteur of June 15 contained a proclamation of the king, in which he called upon all Frenchmen to do their duty in the colleges, to rely upon his constitutional intentions, &c. In this proclamation are these remarkable words: "As the father of my people, my heart was grieved; as king, I felt insulted. I pronounced the dissolution of that chamber." It ends thus: "Electors, listen to your colleges. Let no reprehensible negligence deprive them of your presence! Let one sentiment animate you all; let one standard be your rallying point! It is your king who demands this of you; it is a father who calls upon you. Fulfil your duties. I will take care to fulfil mine." The elections for the new chamber took place in the latter part of June and in July. The activity and talent displayed in the opposition papers during this struggle were admirable. Though the success of the army in Algiers became known during the electoral struggle at home, and though all parties exulted in the success of the French arms, it appears that the ministry gained no popularity by it. All the returns of the new elections, which were then announced against the ministry, so that, in the beginning of July, intelligent men spoke of a change of the ministry as a natural consequence; and the funds rose; but the infatuated ministry had determined otherwise. It preferred to attack the charter, violate the social contract, and expose France to a civil war, rather than to yield. Priests governed the monarch; ambition blinded his ministers. The ministerial papers now began to assert, that, after the enemies in Africa were subdued, these at home remained to be conquered. They began to utter the phrase coup d'état, which several papers, under the more direct influence of the clergy, actually demanded. During this time, the king and queen of Naples visited Paris, and many festivals took place, strongly in contrast with the state of political affairs. The king also ordered Te Deum to be sung in all churches of the kingdom for the liberty of the press. July 25, the liberty of the press reached Paris (July 9) four days after the capture of Algiers. The capital was illuminated.

At an earlier period, the negotiations between France, Russia, and Great Britain, at London, relative to Greece, had come to a conclusion, the three powers coinciding in the offer of the sovereignty to prince Leopold of Saxe-Coburg. See Greece.

In several departments numerous confiscations had taken place, which were evidently the work of incendiaries. Many people, whether reasonably or not, believed these atrocities to have been perpetrated by the instigation of the ministry. This appears from the cries of the populace, when prince Polignac was arrested—"This is the mouster who has burned our houses. Hang him, hang him!"

Of the 221 who voted for the answer of the chamber, 220 were re-elected. The liberals in the new chamber were 270, the ministerial members 145, and fifteen were undecided. In consequence of this result, the ministers gave a report for the king's dissolution (July 26), setting forth at length the dangers of a free press (of which they say, "At all epochs, the periodical press has only been, and from its nature must ever be, an instrument of disorder and sedition"), and calling upon the king to suspend the liberty of the press—a measure authorized, as they asserted, by the 14th article of the charter, which declares, that the king has the power to make all regulations and ordinances for the execution of the laws and the safety of the state. "The state," they said, "is in danger, and your majesty has the right to provide for its safety. No government can suspend a liberty if it has not the right to provide for its own safety; besides, the 8th article of the charter only gives every Frenchman the right of publishing his own opinions, but not, as the journals do, the opinions of others; the charter does not expressly allow journals and the liberty of the press. The journals misrepresent the best intentions of government; and the liberty of the press produces the very contrary of publicity, because ill-intentioned writers misconstrue every thing, and the public never knows the truth." This report, to which its consequences have given an historical importance, is one of the shallowest and most preposterous state papers on record. It combines unconstitutionality with miserable sophistry and the verbiage of despotism. Despotism must never argue, or it is lost. The Polignac ministry had resolved to violate the constitution, and had not talent to play the despot. History proves that nothing is so violent and so blind as bigotry, religious or political; and this was the characteristic of the whole party, priests and laymen, who supported, or rather instigated, Polignac. This report was accompanied by the three celebrated ordinances, which were then announced against the ministry. The first dissolved the chamber, "according to the 50th article of the charter" which was plainly annulling the election, not dissolving the chamber, because the new chamber had not been organized. The second suspended the liberty of the periodical press, although, according to law, the liberty of the press, even if suspended, revives of itself, on the dissolution of the chamber. The third ordinance prescribed a new law of election, from which the ministers expected more favourable returns.

The Constitutionnel, the National, Courrier Francais, Temps, Globe, Journal de Commerce, Messenger, Figaro, and others, all liberal papers, resolved to appear without the authorization of government, required by the new ordinance. The Journal des Debats refused to unite in this measure. An opinion of eminent lawyers was published, declaring that the model was lawful property, and could only be attacked by regular judicial process. All the liberal papers in Paris were suppressed, and only the Moniteur Universel, Quotidienne, Gazette de France, Drapeau Blanc, allowed to appear. The same thing was done in the departments. The seizure of the liberal journals, on Tuesday morning,
July 27, was the signal of the revolution. July 28, the bank refused to discount bills, and all the manufacturers discharged their workmen, which, of course, increased the discontent. The Jacobins, however, began by an attack of well-dressed people upon the Gendarmes. It is a striking feature of the recent revolutions or political insurrections in France, Italy, Germany, and Spain, that they have emanated from, and been principally executed by, the well-informed middle class, not by the rabble, under the pressure of some physical necessity. Some persons were killed at the Palais Royal. Prince Polignac received the congratulations of his party at his palace, on his complete victory over the insurgents. Marshal Marmont, duke of Ragusa, had received the command of the King's troops.

Wednesday, July 28, all Paris was in arms early in the morning. The national guard appeared in their old uniform; the tricolor flag was displayed on several buildings. The battle began in the place de Greve; the Hotel de Ville became the point of attack; it was repeatedly taken and retaken, but finally remained in the hands of the people. The Swiss guards were attacked at the Louvre; the royal lancers fought on the Pont-Neuf. Evening came on. The loss of both parties had been considerable. In the night of July 27, the streets and boulevards were barricaded, the pavements were torn up, to serve as musket-stocks, or as dyke to defend any place wherever they could be found; the women attended the wounded. The Hotel de Ville had remained in the hands of the citizens on the evening of the 28th. The Tuileries and Louvre were now to be taken. Many of the troops had been disarmed; some were unwilling to fire on their countrymen; some openly went over to the citizens.

On the 29th, general Lafayette was appointed commander-in-chief of the national guards by the liberal deputies (a considerable number of whom had assembled in Paris), and was received with enthusiasm by the Parisians. These deputies also protested against the dissolution of the chamber, and declared themselves to be still the lawful representatives of the nation. The scholars of the polytechnic school had joined the people on the morning of the 29th, and in some cases, taken the command. A youth of twenty years of age, belonging to this school, led them into the Louvre, from which he retreated to the Tuileries. This palace was also taken, by the people, with one of these youths at their head. The Luxembourg had already fallen into their hands. The young men of this school rendered the greatest service during the day in the cause of the nation, and displayed an astonishing coolness and courage. They afterwards declined the medals granted to them, and also the rank of lieutenant, offered to each, in case he entered the army. At one o'clock, Paris had obtained the victory. From 5000 to 6000 persons were killed and wounded. The number of troops engaged was 17,500. The fighting lasted on and off throughout.

Amidst the fire of musketry, several deputies, viz., general Gerard, count Lohu, M. Lafitte, M. Casimir-Perrier, and Mauguin, went to Marshall Marmont. Lafitte entreated him to stop the carnage, and declared himself personally responsible for it. Marmont said he felt the same, but, as a soldier, he must obey his orders. He offered to ask prince Polignac whether he would treat, but, after a quarter of an hour, returned with a decided refusal. "We have then a civil war," replied Lafitte, and the deputies retired.

July 31, the deputies published a proclamation, declaring that they had issued an order to Marmont to become lieutenant-general of the kingdom. At noon of the same day, Louis Philippe d'Orléans issued a proclamation, declaring that he had hastened to Paris, wearing the "glorious colours" of France, to accept the invitation of the assembled deputies to become lieutenant-general of the kingdom. A proclamation of the same date appointed provisional commissions, for the different departments of government as follows: for the department of justice, M. DUPONT-de l'Eure; of finance, baron Louis; of war, general Gerard; of the marine, De Rigny; of foreign affairs, M. Bignon; of public instruction, M. Guizot; of the interior and public works, M. Casimir-Perrier; signed Lohau A. de Puyraveau and Maguin de Schonen. The King, with his family, had fled to St. Cloud. History has but few events to show that can be compared with this struggle in Paris. The Parisians left their habitations to fight, without organisation, we might almost say without arms, against some of the best troops in the world; and for what? Were they a rabble driven by hunger, or a rebellious nobility endeavouring to wrest new privileges from the monarch? No; they were men who would not suffer themselves to be stripped of their civil rights, but firmly adhered to them to death. It was in this respect a moral revolution, like that of the Americans, fighting for principles. The Marseilles Hymn, the song of the revolution, which once had fanned in so many Frenchmen the fire of liberty, did wonders during the revolution of 1830. It brought back the tone of the song of old conspirators. M. Rouget de Lisle received, in consequence, a pension of 1500 francs from the private purse of the duke of Orleans, (See CA IRA, and Marseilles Hymn.) In the departments, events took place similar to those in Paris, and the people were everywhere victorious.

The King and his household fled on July 31, from St. Cloud to Rambouillet, a small place six leagues W. S. W. of Versailles. Three commissioners, Messrs De Schonen, marshal Malson, and O'Dillon Barrett were sent to treat with him. They informed the authorities at Paris, under date of August 3, that the King wished to leave France by way of Cherbourg; to restore the crown jewels, which he had taken from Paris, &c. These concessions were produced by the advance of the national guard toward Rambouillet. On the morning of August 2, the abdication of Charles X. and the dauphin, Louis Antoinette, were read by the king to the whole of the nation. The abdication, however, was made in favour of the duke of Bordeaux. A letter of the king, of August 2, appointed the duke of Orleans lieutenant-general of the kingdom, and ordered him to proclaim the duke of Bordeaux (born on the 29th August, 1820), king, under the title of Henry V.

August 3, (the day originally fixed for the opening of the session), the chambers met. The lieutenant-general addressed the peers and deputies, and announced the abdication of Charles. Casimir-Perrier was chosen president of the chamber, which had met; during the late memorable events, under the vice-president Lafitte.

August 6. The chamber of deputies declared the throne of France vacant, de jure and de facto, and discussed those changes of the charter, which we have already given in the former part of this article. On the 7th, the proposed changes were adopted, and the whole power of the crown became vested in the duke of Orleans, to become king of the French on condition of his accepting these changes; the vote stood 219 in favour, thirty-three against. The whole number of deputies is 430; so that 219 is not only an immense majority of those present, but a majority of the whole body. On the 8th, the chamber went in a body to the duke of Orleans, and offered him the crown, which he accepted; and, on August 9,
he took the prescribed constitutional oath. A majority of the chamber of peers, actually present, concurred in the slogan.

The Moutier of August 12th contained the names of the new ministry, as follows: foreign affairs, count de Molé; war, general Gerard; finance, baron Louis; interior, Guizot; marine, general Sébastien (q. v.); keeper of the seals and minister of justice, Dupont-de-l'Étou; president of the ministry, duke de Broglie. B. Constant was made president of the committee of legislation and the administration of justice in the council of state. Lafitte and Casimir-Périer were also appointed ministers of state, without special departments.

Meanwhile, the people, manifested by the people during the struggles in Paris, which prevented all outrage and plundering, was still further shown in the unmolested retreat of Charles X., who took passage for England in two American vessels. He was received here merely as a private person. Some individuals, including M. Chateaubriand, proposed to acknowledge the duke of Bourboun, as king, on the ground of expediency. But the policy of giving the crown to a minor in such troublous times, and to one who could only regard the privileges of the people as wrongfully wrested from his royal authority, was hasty and hazardous.

The revolution of July, 1830, thus drove one dynasty from the throne of France, and seated another in its place: it thus prevented a return to the despot government of the seventeenth century, and preserved the little state of liberty which the charter of 1814 had granted, with a sparing hand, to the French nation. In theory, it sanctioned the doctrine of the sovereignty of the people, and dealt a fatal blow to the absurd notion of passive obedience; but in practice, it has done little towards realizing the expectations of those who looked to see a monarchy, surrounded by republican institutions, substituted for the charter government. The popular or revolutionary party, or "party of the movement," as they have been called, demanded that the work of reform should go on, and that more power should be lodged in the hands of the people; while the conservatives, or juste milieu (proper medium) party, resisted all further change, and were desirous to go as little out of the way of legitimacy as possible. The majority of the chamber of deputies, which had been elected previously to the revolution, was of the latter party, while the ministry was divided. Lafayette, Lamarmore, Dupont-de-l'Étou, &c., were among the most prominent of the movement; the leader of these, Lafayette was commander-in-chief of the national guards, Dupont de l'Étou keeper of the seals, and Odillon-Barrot prefect of the Seine.

In the month of August, four of the ex-ministers, Peyronnet, Guernon de Ranville, Chatelouze, and Polignac, were arrested; and, on the 23rd of Sept., a committee of the chamber of deputies reported resolutions in favour of impeaching them of treason, for having falsified the elections, arbitrarily changed the institutions of the kingdom, and excited civil war. After two days' discussion, the report was accepted; on the 30th, the impeachment was sent up to the peers. The accused were then examined before a commission appointed by the peers for this purpose, and the 15th of December was finally fixed upon for the trial of the impeachment.

During the time that had been made and carried, in the chamber of deputies, for an address to the king, praying him to cause a bill (projet de loi) abolishing capital punishments to be presented for their consideration. The king, in his answer, promised to comply with this request, and expressed his disapproval of inflicting capital punishments for political offences. The people, who demanded vengeance on their late oppressors, considered this in the light of not compromising between the executive and legislative, to screen them from their fate; and, on the 17th and 18th of October, mobs assembled before the Palais Royal, uttering threats against the government. The national guard and the troops of the line were both put in requisition to preserve tranquillity; and the ministers felt themselves obliged to abandon the intended bill. On occasion of the disturbances, Odillon-Barrot, prefect of the department of the Seine, issued a proclamation exhorting the people to preserve order, in which he designated the proposition of the ministers as unseasonable. The conservatives at the ministry reconceived the exchange language by a subordinate officer, and demanded his dismissal. But the king, fearful of the consequences, would not consent to this step; and baron Louis, the duke de Broglie, count Molé, and Guizot, immediately quitted their offices.

The new ministry was now composed of the movement party: Dupont retained the seals, Sebastien the navy department, and Gerard the war department, while Lafitte succeeded to the post of president of the council and minister of finance, marshal Masion to that of minister for foreign affairs, Montaivet to the ministry of the interior, and Merillon to that of public instruction. In a few days, however, general Gerard retired, and was replaced by marshal Soult; marshal Masion was succeeded by Sebastien; and the marins was given to count d'Argeout.

The trial of the ministers finally came on Dec. 15, and lasted till the 21st, the court sitting every day from ten o'clock till four. M. Persil, the attorney-general, Berenger, reporter of the committee who had prepared the bill, and Madiez de Montjau, were appointed on the part of the deputies to conduct the impeachment. The 15th, 16th, and 17th, were occupied in the opening of the charge by Berenger, and the examination of witnesses. The evidence of the first charge, that of having interfered with the elections, consisted of the circulars of the ex-ministers, requiring the public functionaries to vote for ministerial candidates, and of other written instruments, promising places in return for votes. The charge of having arbitrarily changed the institutions of the country, rested on the memorial to the king, and the ordinances themselves, the illegal and unconstitutional nature of which was undeniable. The use of military power to enforce them was equally a crime; and the bill for having excited civil war, and armed the citizens against each other, was substantiated by evidence, showing that they had directed and approved of the employment of the troops in Paris during the three days. The 18th, 19th, and 20th, were occupied by the speeches of the attorney-general on the import of the evidence, and of the counsel for the prisoners, and by the reply of M. Montjau for the impeachment. The counsel for the accused were M. Martignac for prince Polignac, Sauzet for Chantelouze, Hennepin for Peyronnet, and Creuxmeu for Guernon de Ranville. Martignac contended, first, that, as the provision of the charter, which rendered the ministers responsible, also declared the person of the king inviolable, and the nation had, by the acts of July, chosen to render the king personally responsible, and driven three generations at once from the throne,—that article of the charter was virtually nullified; secondly, that the charter did not constitute the court prescribed by the charter, as two-fifths of its members had been ejected by the accusers themselves; and, thirdly, that there was no law which applied to the case, the charter having only provided that laws should be passed defining what should be esteemed treason, which laws had
never been enacted, and the articles of the penal code, which described certain offences, supposed to be similar to those with which the prisoners were charged, not designating them as punishable. The managers of the impeachment asserted, in reply, that the ministers had rendered themselves responsible by signing the ordinances, and that the expulsion of the royal family was only one consequence of their crime, from the punishment of which the accomplices could not escape on account of the plea that the principals had been condemned. On the 21st, the court found the prisoners guilty of treason, under the fifty-sixth article of the charter, by having countersigned the ordinances of July 25, attempted to enforce the execution of them by arms, and advised the king to declare Paris in a state of siege, to subdue the legitimate resistance of the people. The judgment then declared that, as no law had determined the punishment of treason, it belonged to the court to supply the deficiency; and condemned prince Polignac to imprisonment for life, and to civil death; and Peyronnet, Chanteloup, and Gueron de Ranville, to imprisonment for life, with the loss of their titles, rank, and orders. —See Procès des derniers ministres de Charles X., 2 vols., Paris, 1830.

While the trial was going on, the Luxembourg was surrounded by a clamorous mob, demanding the death of the prisoners, and threatening vengeance in case their sentence was not satisfactory. As the trial proceeded, and it began to be suspected that a capital sentence would not be pronounced, the violence of the multitude increased, and every thing seemed to menace a new insurrection. The troops and national guards were kept under arms by night, and bivouacked in the public places. The whole personal influence of the king and of Lafayette was also employed to soothe the populace: still the number and clamour of the mob became so alarming that it was determined to remove the prisoners secretly to Vincennes before sentence was pronounced. This being accomplished on the 21st, the populace received the annunciation of the sentence, on the next day, without committing any actual violence, as they had no direct object of attack.

These disturbances were no sooner over, than the question of the extension of the elective franchise became a subject of division between the chambers and also between the ministry itself. The retirement of the keeper of the seals, Dupont-de-l'Eure, who was in favour of more extensive changes than his colleagues in the ministry; Odillon-Barrot also resigned the prefectship of the Seine. The chambers were, likewise, employed, at this time, in the permanent organization of the national guard, and were disposed to abolish the office of commander-in-chief of that body, which had been created during the summer, and bestowed on Lafayette. The influence of that illustrious patriot had been somewhat diminished by the successful conclusion of the trials, and the suppression of the conspiracies. Dr. Crucc, minister of finance, which his authority had contributed so much to bring about,—and the conservatists now became desirous to get rid of those very men who had directed the storm of the revolution, and calmed its fury. Lafayette, therefore, perceiving the counter-revolutionary tendency of the government, resigned his post on the 1st of December, on the 21st, he had been obliged to resign his authority, and the minister of finance, which, if we have before said, had been elected before the revolution, was disposed to look upon the ministry with jealousy, as partaking too much of the revolutionary lean.

This, then, was the state of France at the close of the year in which the act of the revolution had occurred. A new king, who was understood to have no great regard for the "men of July," and who was willing to end the revolution with the change of dynasty which seated himself on the throne, had been created by the two chambers, without any appeal to the nation. They chose the persons, to the exclusion of the peers, men in general attached to the old régime, and enemies of the revolution, and of the deputies, composed of a majority of men who had been inclined to oppose the arbitrary policy of the late government as inexpedient and unsafe, and had so far yielded to the popular call as to sanction the change of dynasty, but had no wish to make further changes in the constitution of the government. The courts of law were composed almost entirely of friends of the old order of things, many of whom had shown themselves the ready instruments of an arbitrary administration in prosecuting the friends of freedom. The body of the nation had, of its own accord, formed itself into national guards, which chose their own officers; but it had never been accustomed to the exercise of any political rights, and it now looked to be admitted to the privileges of freemen. It demanded the abolition of the hereditary peerage, the extension of the franchise, the reorganization of the municipal administration, in which the nation should be admitted to take part. In regard to foreign affairs, the patriots, or the movement party, were urging for a favourable answer to the overtures of the Belgians. They complained of the refusal to accept the crown, which had been offered to the duke of Nemours, and they complained equally of the interference of the French ministers in preventing the election of the duke of Luchtenberg.

"When called upon," said Lafayette, "to explain my notions of non-intervention, I declared that whenever the right of sovereignty was claimed by the people, every intervention in the affairs of that people should be considered as a declaration of war against France. As to the union of Belgium and France, I would not have stopped to inquire whether it would be displeasing to this or that power; I would only have asked whether the will of the majority of the Belgians was not of effect, and the will of the representatives of the French nation to accede to, the union."

In the beginning of the year 1831, the public mind continued to be agitated by conspiracies and rumours of conspiracies of the Carlists, or partisans of the exiled family. On the 15th of February, an attempt was made to celebrate the anniversary of the assassination of the duke de Berry; and a print of the young duke of Bourdeaux, his son, was crowned with flowers. This foolish or criminal act rendered Paris the scene of new riots. A mob collected and surrounded the palace, and the minister at the beginning of December, said the fleurs-de-lys, or emblems of Carlism. They then sacked the archiepiscopal palace, and proceeded to commit similar acts of violence; and the government were obliged to calm the excitement by causing the fleurs-de-lys, and other obnoxious emblems, to be removed from all public buildings. Another consequence of this interference of the representatives of the French nation was that the chamber of deputies was called in to consider a bill for the perpetual exile of the banished royal family from France, which passed the chamber of deputies by a majority of 332 to 129, and the peers, by a majority of 29.

On the 13th of March, the Lafitte ministry, which had enjoyed neither the favour of the king, of the party, nor the confidence of the peers, was dissolved, and was succeeded by men of the former party, Casimir-Perrier, president of the council, taking the
office of minister of the interior, Baron Louis succeeding Lafayette in the department of finance, and Admiral Riguy, d'Argout in that of the marine. Sebastiani and Soult retained respectively the foreign and war departments, and Montalivet exchanged the posts of minister of education and finance.

The new ministry was much more firm and energetic than the former one, and declared the principles on which it was determined to govern, to be, put down all irregular power at home, and to refrain from all armed intervention abroad.

One of the first acts of the new ministry was the introduction of a bill, in the nature of a riot act, for the prevention of those crowds and commotions which continually disturbed Paris. It enacted that all persons forming an assemblage in any public place should be bound to disperse when required to do so by the prefect of police; and that, after the summons had been repeated three times in vain, force might be used. This law served to strengthen the hands of government; and it was rigorously executed in April, when the public peace was disturbed by some riotous assemblages of the populace, which seemed to have no definite object or assignable cause.

A new electoral law had been already brought before the chambers by the former ministry. By the old law, the qualifications of an elector were, that he should pay 300 francs of direct taxes, and be, at least, thirty years of age: these qualifications excluded the great body of Frenchmen from the elective franchise, which, in fact, belonged to a small body of not more than 80,000 men out of a population of 32,000,000. The projet of the ministers was to double the number of electors in each college, taking the whole number from those who paid the highest tax in each department. After considerable discussion, the chamber of deputies, however, fixed the qualifications of electors at 200 francs of direct taxes, and twenty-five years of age, with a provision that when the number of electors was smaller than one in one hundred and fifty inhabitants, the next highest taxed should be included in the electoral list to make up the proportionate number. This change carried the number of electors to about 215,000. The departmental colleges, composed of the fourth part of the electors who paid the highest taxes, and who had a double vote, were also abolished, and the qualification for being elected was reduced from the payment of 1000 to 500 francs of direct taxes.

Notwithstanding the popularity of the king, discontent and political divisions continued in full force throughout his dominions. It was no longer doubted, however, that the government, with M. Casimir-Périer at their head, felt increased strength. Accordingly, M. Anthony Thowret, editor of the Révolution newspaper, was prosecuted, and sentenced by the court of assizes to three months' imprisonment and a fine of 5000 francs, for an article published by him, calculated to bring the king's government into hatred and contempt; and, on an attempt being made to conscrate the column in the place Vendome as an altar to the name of Napoleon, on which occasion the public strewed the rails, the column itself, and the area between, with dedicant books, prints, writings, votive garlands, crowns, wreaths, &c., the prefect of police came to the place and removed the monuments speedily to the spot, turned out the worshippers, and actually swept the whole of the offerings from before the popular idol, without resistance.

About the same period, a medal was decreed to be struck for the decoration of those who principally distinguished themselves during the "days of July." This decree, however, was not carried into execution without jealousy and contention. The ministry designated the ornament as donné par le roi (given by the king), and required an oath to Louis Philippe and the charter. The individuals for whose honour the decoration was designed, objected to the reception of that peculiar distinction.

In the midst of this anarchy, the king of the French, with that provident foresight and conciliatory disposition which have characterized most of his movements, determined on a tour through the provinces of his dominions, one of his objects having doubtless been to attach to his person, by so popular a course, a large portion of his subjects, who might otherwise have been disposed to join the disaffected. During this progress, his majesty was received everywhere with great enthusiasm. At St Germain, Poissy, Nantes, Dieppe and other places, he reviewed different bodies of the national guards, amid the acclamations of the populace, who, from St Cloud to the departments of the Seine and Oise, formed a line on each side of the high road, with banners, tri-coloured flags and branches of trees. Yet, notwithstanding these loyal demonstrations, France still contained all the elements of political excitement; and to cope with the agitation arising from the conflicting elements, was no easy task to a newly established government; but, by the active co-operation of the national guard, the efforts of the authorities had hitherto been successful in repressing the numerous tumults with which they had been compelled to contend.

In the early part of June, France declared war against Portugal, with the following claims: "Liberty to Bonhomme, with 20,000 francs of indemnity, and the dismissal of his judges; the recall of Claude Souvinet from banishment; an indemnity of 6000 francs to each of the Gambergs and Vailons detained at Oporto, and 10,000 francs to Dubois; adherence to the French form of arrest; prohibition of the insertion of articles in the journals against France or its government, and of political discourses against the French by ecclesiastics; and, lastly, an apology to the French consul, for offensive expressions injurious to his character." This expedition, however, for which considerable preparations were made, ended in the capture of eight Portuguese ships of war, which caused a speedy adjustment of the differences which had been complained of.

On the 14th and 15th of June, a commotion of rather a serious character arose in Paris, which was not subdued without the interference of the military. Its origin was absolutely insignificant, having arisen from the unfeeling attack of awatchmaker on a young ballad-singer, who was chanting "Napoleon in the Hundred Days." This assault on the minstrel was instantly resented by the mob by a fierce attack on the premises of the watchmaker, and by a cry of "Down with the Carlists." Trailing as was the cause of offence, the tumult prevailed to such an extent, that several corps of municipal and national guards were served with ball-cartridge, and remained under arms all night, in the apprehension that the rioting would be renewed in the morning, which, however, fortunately, was not the case. At Beaune, also, in the south of France, there was some serious rioting about the same period. The people there, on the day of the fete raised the tree of liberty; and, the mayor having called out the troops to pull down that tree and disperse the soldiers joined the patriots; and a body of Carlists, who came from the country to pull down the tree,
were attacked by the chasseurs, some killed, some wounded, and others taken prisoners and ill used. Lyons was also visited by some disturbances, and the Chouans agitated the west of France; but, by the severity of government, all these tumults were speedily repressed.

A reform of the chamber of peers now became the principal cry in France; in other words, the abrogation of hereditary peerage, and the appointment of a senate, the members of which should possess, from their constitutional characters, a solid claim to public confidence. The venerable and popular Lafayette published a long election address, in which he strongly advocated the expediency of a peerage for life only; and so unpalatable had hereditary power been in France since the revolution of 1789, that the government was obliged to make this concession to the public will.

Meantime other subjects occupied the minds of the French—the settlement of Belgium, the deliverance of Poland, and the emancipation of Italy and the Peninsula; and the meeting of the chambers was looked forward to with intense interest. The elections had been held, and the ministry of strength was, though great efforts had been made by the movement party, they gave a decided majority in favour of the ministry. Of the thirteen deputies returned for Paris, the ministerial party carried eight. Pledges, however, were very generally demanded, and as generally given, to abolish the hereditary peerage; but, except upon this point, the movement party did not seem to have gained any accession of strength by the creation of the new constituency. It should, however, be remarked that this constituency was, as we have already stated, extremely small, and that the whole administration, down to the minutest munificences, was lodged solely in the hands of the government.

On the 23d of July, the king opened the chambers with a speech which produced a very powerful effect. Adverting to the internal state and interests of the country, he declared his resolution to punish equally the machinations of Curlist conspirators and of republican alarmists. He stated that the Austrians, on the demand of France, had evacuated the papal states; that the Belgian fortresses on the side of France were to be demolished; and that the Portuguese fleet had been captured.

On the 29th of July, the celebration of the three memorable days of the previous year's revolution took place, and was attended with great splendour and popular enthusiasm. The first day was devoted to the inauguration of the brazen tablets in the Pantheon, recording the names of the heroes who fell in the cause of liberty—a very splendid and imposing ceremony. On the second day, Paris became one great fair, when the population gave themselves wholly up to joy and merriment. On the 29th, there was a review, which was a grand spectacle. The king and royal family were everywhere received with the greatest enthusiasm. There were above 100,000 men under arms; and the cordiality which pervaded the ranks appeared almost to confound the rules of military discipline.

The election of the administration (that is, of the president and secretaries of the standing committees of the chamber of deputies) showed the strength of the ministerial party. Out of eighteen, the opposition carried only one. But the great trial of strength was to take place in the choice of the president of the chamber. The friends of M. Lafayette had determined to elect him president: the ministerial candidate was Girod de l'Ain; and the prime minister had declared that if the former was chosen he should immediately retire. Lafayette, though by so means with the movement party, was supported by them as an opposition candidate, as well as by a large body of his friends. The struggle, which was severe, resulted in the choice of the ministerial, by a plurality of only three votes above the opposition candidate; but the smallness of the ministerial majority, M. Casimir Perrier resigned, and the ministry was dissolved; but, on the invasion of Belgium by the Dutch being communicated by king Leopold, and a resolution formed to send 50,000 French troops to repel it, they consented to the appointment for some time longer of the ministry.

Riots, in Paris and other parts of France, for the most insignificant causes, and the question of the abolition of hereditary peerage, continued subjects of apprehension and agitation until the middle of September. On the 16th of that month, the fall of Warsaw to the Russians was officially announced by ministers to the chamber of deputies. 'This intelligence became at once the topic of conversation and indulgent declamation in every circle; and, on Friday, the 17th, "War against Russia!" and "Long live the brave Poles!" were the shouts of most formidable rioters in the Palais Royal and boulevards, who attacked the government buildings, the Porte St. Martin, and committed many other outrages. On the following day, the ministers Perrier and Sebastiani were burned in effigy; and the vast multitude which had congregated could only be controlled by the military. The riots continued throughout the whole of Sunday, and, on Monday, were prosecuted with renewed violence, and the most dangerous cries and vociferations, as, "Down with the king!" "Turn out the ministers!" &c. The apprehension of twenty of the ringleaders, who, assembled in the retired apartment of a secluded dwelling, were taken in the act of arranging plans for further riotous proceedings, and the loyalty of the national guard and soldiers of the line, frustrated the designs of the disaffected; and the explanations of the war minister, Sebastiani, contributed materially to satisfy the minds of the more intelligent of the citizens of Paris. "Every pacific exertion," he said, "had been made to assist Poland against Russia. Poland had 3,000,000 men, it was true; but it had neither ports, mountains, nor means of defence. Overtures, nevertheless, had been made at St Petersburg, and Russia had been made to feel that the fate of Poland was a question of interest to Europe. It had been promised by the cabinet of Peters burg, the liberty of Poland, and France, and in this all the great powers of Europe concurred." On the 10th of October, the annihilation of the hereditary quality of the French peerage was carried by an overwhelming majority, the numbers having been 324 to 86.

With the exception of discontents in the provinces, and the discussions arising from the measures taken by government against the efforts of a few of the refractory editors of public journals, affairs now, for some time, bore an aspect of comparative tranquillity. Such, in the beginning of November, was the internal state of France; and its probability of peace with other nations was equally flattering.

The Moniteur of the 22d November contained a list of newly-created non-hereditary peers, comprising some of the most distinguished leaders of the old Bonaparte family; and several scientific and literary characters, as the baron Cuvier, Cassini, and Gilbert des Vergins, with a few representatives of France.

The object of the king and ministers, in these selections, appears to have been to conciliate all except the republican party. This creation had been rendered necessary from its having been sufficiently ascertained that a majority of the peers was not only against the abolition of the hereditary principle but had determined to maintain their opinions
in spite of the dangers which might arise from such an opposition to the popular will. The bill was carried through the chamber (Dec. 27th) by a majority of thirty-six, exactly the number of new peers that had been created.

A bill also passed the two chambers, banishing from France for ever all the members of the elder branch of the Bourbons and their descendants. Although proved of by the ministers, it was carried by a large majority, with an amendment, by which the penalty of death, attached by the bill to a violation of the prohibition against entering the kingdom, was omitted. The same bill, by its second section, denounced the same sentence of perpetual exclusion against the family of Napoleon.

The crowds that produced the repeated riots which so frequently disturbed the peace of Paris during this year, were principally furnished from the multitude of unemployed men, whom the unsteadiness of all relations, consequent on the revolution, had deprived of the means of support. Credit, trade, and manufactures were ruined. These riots, again, by increasing the feeling of insecurity, augmented the mischief. In the course of the autumn, the chambers had voted 18,000,000 francs to be applied to the relief of the manufacturers, and in providing employment for the people. In asking this grant, the ministers pointed out the existing state of distress, great, from the riots so frequent in the capital; but it existed likewise in the provinces, and, at Lyons, led to disturbances much more serious than that which had molested Paris. A suburb of that city, called the Croix Ruse, is inhabited principally by weavers, as are also the suburbs of Vaise, La Guillotière, and Les Brotteaux, the whole population of these suburbs being about 36,000. The weavers, it appears, had been discontented ever since the revolution of 1830, which had so materially depressed their trade that it was barely possible to subsist on their wages. Some time previous they had resolved on a tarif or price-list, which, however, in consequence of the state of their trade, the masters were compelled to reject. On the 21st of November, the workmen simultaneously struck for wages, and the tumult immediately commenced, the mob of the town, men, women, and children, joining with the insurgents of the chamber (Dépôt) to destroy the national guard. The national guard was speedily called out; but their conduct on the occasion appears to have been equi-vocal, and their interference fruitless. The prefect of the police and commandant of the garrison, general Ordman, endeavoured in vain to pacify the rioters, the numbers of whom, well supplied with arms, became hourly more formidable. The mob, at length, after having been fired on by the national guard, and some of them sabred by the cavalry in repeated charges, became desperate, and attacked and disarmed several bodies of the military, and took two cannons; but, when their muskets, they cast balls during the night, at the time barracing the streets of their quarter. On the following day, they attacked and beat the troops and national guard in every quarter. Immense multitudes from the faubourgs and the heights of La Croix Russe, marched on the Hotel de Ville, carrying the principal posts and bridges by the seige taken by the commune. The workmen in all parts of the town co-operated in this movement, by unpeaving the streets, raising barricades, and firing on the military from the windows. They also burned the buildings of the octroi (tax-houses), and several dwelling-houses, from the windows of which, they were shot by the officers and their adherents as they advanced. Nothing was carried away, but all was burned or broken on the spot, with the view of showing that it was not plunder which was sought.

These troubles at Lyons were announced at Paris by the Moniteur of the 23d of November, in the form of a private letter, and caused the greatest excitement in the metropolis. On the 25th, the same paper published an ordinance of the king, appointing the duke of Orleans and the marshal duke of Dalmatia (Soult) to repair instantly to Lyons, and take the necessary steps for the suppression of the insurrection. The troops of the lines being expelled from the city, on the 24th all was quiet. The shops and theatres were opened, and the workmen and their allies (among whom are stated to have been many of the national guard) were in possession of the city, which was kept then in a state of siege. Its authorities had been deposed by an insurrectionary mob and its armed force expelled; yet, when victory had thus been obtained, the insurgents of Lyons instantly embraced the opportunity to recall and acknowledge the civil authorities whom they had temporarily deposed, denying all political motive, and simply demanding such regulations as should ensure them food. The consequences of this extraordinary state of affairs were, that order became perfect, and business and pleasure were at once resumed, though the city was still virtually in possession of the insurgents and their partisans. On the 24th, the municipal council of Lyons voted the sum of 150,000 francs, to be paid to the merchants of the city, for the damages sustained by their goods. The workmen were waited on by the president, who expressed his sympathy with their distress, and to afford succour to the wounded and their families. For the same purposes, a public subscription was opened, to which the contributions were considerable. From the most authentic accounts it may be collected, that the number of killed, on both sides, during the sanguinary contention of which Lyons was the scene, was between 500 and 600; of wounded, the amount was much more considerable. On the 4th, the duke of Orleans and marshal Soult, with a formidable escort of national guards, troops of the line, chasseurs, and artillery, entered the city without impediment. The prince was received by the mayor of Lyons, who addressed his royal highness, and received a gracious reply. The troops having repaired to their quarters without interruption, an order of the day was issued, dissolving the national guard of Lyons, Guillotière, Croix Russe, and Vaise, with disgrace, and commanding the instant surrender of their arms. The thirteenth regiment of the line was publicly cashiered for suffering his soldiers to be disarmed, and the men of the regiment were severely reproved. Measures were subsequently taken against a portion of the press, stated to have encouraged the insurrection of the operatives of Lyons; and, the city being placed under military government, and no apprehension being entertained that its tranquillity would be again disturbed, the duke of Orleans and the veteran marshal returned to Paris on Sunday, the 11th of December.

Early in the year 1832, a convention was finally concluded between the United States of America and France, by which the latter agreed to pay the sum of 25,000,000 francs to the former, in six annual instalments of 4,166,666 francs each, in full for all claims of the citizens of the United States for unlawful seizures, captures, sequestrations, or destructions of their vessels and property in the course of trade during the war with the government; the former engaging to pay, on its part, the sum of 1,500,000 francs, in six annual instalments, in full of all claims presented by France on behalf of her citizens. This engagement with America, France neglected or failed to fulfil; and, towards the end of 1834, order was given by the address to congress, used language on the subject of so belligerent a nature, that fears were entertained of a war between these two great states. Better
feelings, however, prevailed, and arrangements were entered into for satisfying the demands of America.

Austrian troops having entered the Roman territory in January 1832, for the purpose of maintaining the papal power, the existence of which was threatened by the subject of France, was sent to Italy, where an army was kept during February 22; but this movement, which bore a menacing aspect, did not disturb the peace of Europe.

In the end of March, the cholera made its appearance in France, and, early in April, the prime minister was attacked by it. His illness was arrested, and he died on the 5th of May, made no change in the spirit of the administration. The close of the sessions of the chambers was hastened by the alarm excited by the violence of the disease in Paris, and they were soon after prorogued. According to the report of the sanitary commission of Paris, 18,000 died in that city from cholera, between the 20th March, and 30th of August, 1832.

Paris was, soon after, again made the scene of bloodshed. On occasion of the funeral of general Lamarque, June 5, the military having attempted to disperse the crowd, skirmishing continued for several days, and a number of them was killed.

The populace were not overpowered without much slaughter, and several distinguished men of the movement party were arrested and tried by a court-martial; but the court of cassation pronounced their trial to be illegal. See, on this and other subjects relating to France since the revolution, Sarras's Mémoires sur Lafayette, 2 vols., Paris, 1832.

After protracted negotiations with the different parties, the king did not reorganize the cabinet until the end of October, when it was thus formed: Marshal SoulAssigne the president of the council, in place of Perier) and minister of war; the duke de Broglie, minister of foreign affairs, in place of Soult, whose illness rendered his retirement necessary; Thiers, minister of the interior, in place of Molalvet; M. Human succeeded baron Louis in the department of finance, and Girod, Girod de l'Ain in that of public instruction. M. Barthe, admiral de Rigay, and count d'Argout, retained respectably the same and the portfolios of the marine, and of public works.

In the preceding pages, we have given a brief summary of the history of France; we shall now proceed to consider more minutely the state of that country before the revolution of 1789, as the character of a nation cannot be understood without an exposition, at some length, of the state of things which preceded it.

I. Before the Revolution. — Organization of the Nation. The most profound writers on French history agree, that there was no hereditary nobility under the first dynasty of the Franks, kings, and that, among the Franks, the principle of freedom, which prevailed in the municipal organization, were extended to the general administration of the state. But under the successors of Charlemagne the offices of the empire began to become hereditary; the hitherto presiding officers of the communities then became hereditary princes. The general liberty of the Franks was merged in the feudal system, which afforded the only protection of the weak against the oppression of the strong. Every individual was obliged to have a feudal superior, every piece of ground its feudal lord.

Then arose the maxim, nulle terre sans seigneur. The change of government in 1577, when the third dynasty ascended the throne, completed, on the one hand, the general introduction of the feudal system, and, on the other, the independence of the immediate vassals of the crown, the most powerful of whom, as princes and peers of the realm, enjoyed a complete sovereignty, restrained only by their own vassals. This very circumstance, however, became favourable to the union of the sovereign power in France under one head. For when the kings succeeded by degrees in uniting all these territories, partly with the domain of France, which was transferred to Italy, when the exiled Anconan, February 22; but this movement, which bore a menacing aspect, did not disturb the peace of Europe.

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thing towards defraying the expenses of the state. Besides the title, established under Francis I. (called, from the first commissioner, the decime Paschaline), which, however, bore no proportion to the real annual expenses of the crown, there were three kinds of dukes: ducs de pair, ducs héréditaires non pairs (fifteen in 1779); and ducs d'ancien régime, or ducs de neuf, some of which latter possessed the ducal privileges without the title. But the privileges attached to every class of nobility, even to the new and official nobility, were important. They consisted in an exemption from the principal burdens of the state, particularly in the revenue land-tax (taille), military service, the corvées, the quartering of soldiers, &c. The nobles were indeed subject to a tax on personal property, but this was altogether disproportionate to that on real estate, and was very unequally assessed. The nobility, with the clergy and some orders (the Maltese knights, the order of St. Lazarus, &c.), held, by far, the greater portion of the soil, and exercised over the peasants, attached to their estates, the usual seigneurial rights of jurisdiction, and enjoyed exclusively the right of hunting, &c.

These exclusive rights, extending even to very small things, such as the killing of rabbit-warrens, &c., had become intolerably oppressive to the peasants. In some parts of the country, villegaign, which was abolished on all the crown lands in 1779, still existed. It is difficult to determine the revenue of the nobility before the revolution. Necker estimated the whole income from the landed property (with the exception of the crown lands, and the possessions of the knights of Malta and the clergy) at about 400,000,000, to which is to be added the title of the clergy. How considerable a part of this belonged to the nobility may be inferred from the fact, that, during the revolution, after all titles and feudal dues had been abolished without any indemnification, and after (from May, 1790, to 1801) the national domains had been sold to the amount of 2,600,000,000, there still remained, in the old French provinces, domains of the value of 340,000,000 (in the conquered provinces, their value was 160,000,000, and 200,000,000 in woods, although the sales had been made at very low prices. The proportion of the nobility to the rest of the population, if we may believe the old estimate of Meheust, was 1 to 250; but this proportion varied in different provinces. But although the influence of the clergy, or officers of the government, absorbed the greatest part of the national income, and hardly left the peasant and the artisan the common necessities of life, still they refused to bear their proportion of the expenses of the state, and opposed all the plans of reform, not only those of Necker, whom they hated, but also those of Calonne, a minister entirely devoted to the court and the aristocracy. Besides this, the embarrassments of government were chiefly occasioned by the never-ending claims of the nobility, together with the prodigality of the court of Louis XV. and the disorders in the corps du génie, which were themselves effects of the aristocratic spirit that had infected every department of the state.

The third estate consisted of the rest of the nation, after deducting the clergy and the nobility, and comprised more than twenty-nine ninths of the nation. Subject as he was to his work Qu'est ce que le Tiers-Etat? published 1789 (one of those works which have acquired importance in history), could justly introduce the following series of questions and answers: 1. Qu'est ce que le tiers-état? Tout! 2. Qu'a-t-il été jusqu'à présent dans ce pays politique? Rien! 3. Que demande-t-il? Etre guéri! These few phrases contain the whole secret of the revolution of 1789, and of the struggles of parties
FRANCE. (BEFORE THE REVOLUTION.)

until the revolution of 1830; for it was not the power and consolidation of the crown, but the re-establishment of the ancient aristocratic privileges, which had precipitated France into such a state of confusion and suffering in 1789, that agitated her until the final expulsion of the Bourbons. The third estate, as it existed before the revolution of 1789, comprised the most different classes of citizens, from the poorest peasants and the noblest merchants, to the highest monks and the most distinguished scholars. To this class also belonged, as far as their social connections were concerned, the new noblesse, who had acquired titles from the possession of office, but were despised by the old nobility as upstarts and intruders. This circumstance was a double source of complaint to the nation. The whole weight of the taxes fell upon the lower classes with such an inconceivable severity, increased by the insolence, and frequently by the cruelty of the lords of the soil and their officers, by the abuses of a corrupt and arbitrary administration of justice, and, on the part of the government, by a system of taxation equally corrupt, arbitrary, and preposterous—

that general impoverishment and suffering were the necessary consequences; thence came the bitterness and fury, with which the peasants in many places, and the lower class in the cities, fell upon their nobles and those in power, when the signal of opposition was given. In the city, and the higher class of the third estate were, in point of information and wealth, superior to a great part of the old nobility; and yet the latter endeavoured to maintain an aristocracy, the basis of which had long since been lost. Talents and riches always demand the highest stations in society, and where they are denied them a change will follow, unless the system is supported by mere force. Necker was considered the only man who could save the state, at the time that the administration of the finances was conferred upon him; yet the title of minister, and a seat and voice in the privy council, which were indispensable for his station, were long denied him, because he was not of noble descent. Government knew the causes of the evil only in part; the court was infected with all the prejudices of the aristocracy, and the power of the king was not sufficiently great, even when right measures were adopted, to carry them into effect. This danger to the court nobility and the aristocratic parliaments.

Constitution of the State. Just before the revolution, whole volumes were written on the question whether France had a constitution, or whether the power of the sovereign was absolute. One of the most important works on this subject, Maximes du Droit public Francais, Brussels, 1775, 2 vols. 4to, by Aubry, Mey, and Mauvrot, is in reality only a learned argument against the absolute power of the king, and in favour of the right of parliament to refuse registering the decrees of the king until they had satisfied themselves of their legality; or, at least, the latter right of the French revolutionists demanded before their publication. The authors prove this from the Bible, the fathers of the church, and the most approved theologians of modern times, and, what is of more consequence, from the practice of the government. Madame de Stael devoted to this question a work which was translated, Considerations sur le Cours des Etats de la France, and while the ministers, such as Calonne, denied any constitutional limitations of the regal power, the privileged classes, with the parliaments, were the more zealous in maintaining their existence. Monthon, chancellor of the court de cassation, published in 1790, in a work published in London—Rapport à Se Maj. Louis XVII. But at the same time that it is not to be denied, that the constitution of France, in the earliest times, was based on those free principles which were peculiar to all the German tribes; that at a later period the feudal system had preserved faint traces of them; and that the state-general, even in the reign of Henry IV., had, at least, an undisputed right of granting taxes; yet, on the other hand, it is certain, that the constitutional institutions of France did not form an organized whole, but only dispersed centers and different fragments, the effect of different ages, destitute of all practical force. All the limitations of absolute power which existed (in theory rather than in fact) in the French constitution of that period, were wanting in the first requisites of justice and stability; they were not intended to promote the general welfare, but were merely in favour of certain classes, who formed a very small portion of the whole nation; hence the importance, which had been sometimes ascribed to them, was entirely imaginary. They were besides wanting in every thing which could give them a beneficial influence. They impeded the operations of government, without restraining its abuses. On the case of removing obstacles in the way of the regular action of the administration, they often rendered the irregu-

lar exercise of power necessary. All branches of government, the executive, legislative, and judicial, were so confusedly entangled, that neither could acquire its point of view, acquire it in its place, the administration of the provinces was the chief cause that the ruinous internal customs (traités), and the threefold division of France by douanes (into 1. the provinces des cinq grosses fortes; 2. reputés étran-

 rêges; and 3. traités comme étrangères), were main-

tained, notwithstanding all the exertions of Colbert and his successors. Of the gabelle (salt tax) we shall have occasion to speak hereafter. The other provi-

inces also had estates in the earlier times, but they soon fell into disuse. Their abolition is perhaps chiefly owing to the appointment by Charles V. (in 1573) of the solemn act of the states-general, which re-

see, to distribute the taxes, and to settle all disputes relating to them. This arrangement was gradually changed; the deputies (élus) were erected into boards of taxation, which were established in each bailiwic; and that part of France, which had provincial estates, was divided into 131 élections. But on the occasion of the dissolution of these boards, the right of election was taken from the estates, and the members of the elections, from whose decisions an appeal lay to the cours des aides (higher boards of taxation), were appointed by the king. In all other matters, the provincial administration was conducted wholly by the royal intendants, at 173, elected in 1697. The powers were finally settled by Richelieu, in 1637. France was divided into thirty-two générailités, at the head of each of
which was an intendant. The great power intrusted to single officers, the total absence of all control over them, the difficulty of obtaining justice against them from the minister, the experience of many of their number, and the frequent changes made in them, gave rise to numberless gross abuses, oppressions, and arbitrary acts, which made the intendants very obnoxious. It was, therefore, one of the most useful measures of Necker, during his first administration (1775 until 1781), to restore the administration of the provinces, in a measure, to colleges of the estates. He proposed, in 1778, to establish in each province assemblies provinciales, composed of the three estates, the king appointing sixteen persons in each province (three clergymen, five noblemen, and eight of the third estate), by whom the other members, from thirty-two to sixty-six, should be chosen. This plan was generally approved by the nation (the duke of Burgundy, heir apparent in the reign of Louis XIV., and the dauphin, father of Louis XVI., had entertained similar views), but was prevented from being executed. But in the new states-general, the peers or higher nobility. These reforms were accomplished only in Upper Guienne and Berry, where they produced good effects, as Necker proves in his De l'administration des Finances, II., ch. 5. The further execution of this plan, which would have made the administration of the provinces similar to the British quarter-sessions of the justices of the peace, and the grand jury of the assizes, was interrupted by the dismissal of Necker, in 1781. On Necker's recall to the ministry (in 1788), this plan was again brought forward, and was fully executed, during the revolution, by the creation of conseils généraux (departmental councils), whose operation, however, was again changed through the establishment of prefects by Bonaparte. These departmental councils, with a conseil d'arrondissement in each sub-prefecture, still exist for the distribution of the taxes on real estate, and the regulation of the common expenses of the departments and arrondissements. Their members were, however, appointed by the government until the late changes, of which we shall speak hereafter, and much still remains to be done for the improvement of the administration of the communes. The introduction of the requisite improvements in the French rural districts, in which the duke of Orleans was made to engage himself before he took the oath as king of the French. The states-general of the realm (états-généraux) were first convoked by Philip IV., the Fair (1285—1314), in three branches; and his reign may be considered as the period when the ancient feudal anarchy gave place to an organized government. From this time, the peerage was but an empty dignity; none of its old privileges remained to it except a seat in the highest court of justice, which Philip made permanent at Paris, and to which he appointed justices learned in the law, and from which the peers named by Philip, in the place of the ancient princes of the realm had no separate place. There were no hereditary or official members of this body, but all were elected. The clergy, nobility, and third estate, assembled in the chief bailiwicks, whenever the states were convoked; and chose, each estate by itself, an optional or prescribed number of deputies, which was, therefore, never the same. Thirty-three sessions of the states-general were held from 1302 to 1614: the last consisted of 104 deputies of the clergy, 132 of the nobility, and 192 of the third estate. It separated without having accomplished anything, because the three chambers could not agree. The parliaments first revived these assemblies in the reign of Louis XVI., by declaring (for the purpose of giving weight to their opposition to the reforms of the ministers) that the consent of the states-general was necessary to the laws regulating the finances. At an earlier period, they themselves the successors of the ancient council of peers of the realm, and general estates on a smaller scale. Once (in 1568) they were even summoned, as a distinct estate, to an assembly of the notables. On this ground they demanded that laws passed by the King, even when the States-General should not become valid, unless made public by being entered on their journal. To support this pretension successfully, they ought to have secured the confidence of the nation, by acting for the general welfare, instead of displaying, as they too often did, a selfish regard for their own corporate interests. For want of this, their opposition to government had no firm foundation. Louis XIV. was sensible of this, when, at the age of seventeen years, he appeared in parliament in his riding dress, with his whip in his hand, and ordered his ordinances to be registered. Government was not able, however, to abolish the parliaments altogether. Louis XIV. was able to obtain from Louis XV., by the chancellor Maupou, in 1771, and under Louis XVI., by the minister Brienne (archbishop of Sens), in 1788. But the power of resistance did not lie so much in the general spirit of the constitution as in the intimate connexion of the parliaments with the aristocracy on the one hand, and with the lawyers on the other. The government could with difficulty prevail upon the lawyers to appear at the sessions of Maupou's parliament, nor in the cour plénière established by Brienne, and was thus under the necessity of yielding. When, therefore, the parliament, in contradiction to its former pretensions, declared itself incompetent to register new taxes, and demanded the states-general, it expected to find, in the two first estates, such an opposition to the ministers as to baffie all their exertions to reform the abuses of the aristocracy, and abolish hereditary offices, the exemption of the nobility from taxes, &c. This very resistance of the parliaments obliged the government, from different motives, to convolve the states-general, as the only means of obtaining the support of the third estate against the aristocracy, as Philip IV. had formerly obtained their support against the great vassals. On this account, government was obliged to offer to the states-general, giving it a double number of deputies, and by uniting the three estates in one chamber (which was only a restoration of the old custom. Paillet's Droit public Français, p. 98). This was due to it as the real representative of the nation, and necessary to enable it to be of any assistance to government. But the king had not the courage or wisdom to be a king of the nation; he suffered himself to be so far misled by his courtiers as to be the first opponent of his ministers, and thus the design failed.

B. What we have already said sufficiently points out the great defect of the judiciary, viz., that it was not distinct, but interfered with the legislative and executive departments. There were also other circumstances, which rendered the relations between the government and the courts of justice very complicated. Precisely in those points in which judicial tribunals ought to be under the control and direction of the executive, they were almost entirely independent; whilst, on the other hand, the administration of justice was grossly obstructed by the ministers and the court. This was a consequence of the whole judicial organization, which was still confusedly mixed up with the ruins of the feudal system, in its most important points. We will not enlarge upon the point, that the administration of justice in France was, as yet, a privilege attached to the property of
the soil, and that the justices seigneuriales were everywhere the first elements of the judicial system. A strict control, on the part of the government, over the officers of justice, might have improved the state of things, but such a control did not exist; they were totally dependent upon the feudal proprietors. Nor have we space to treat fully the division of the feudal tribunals, the highest, the middle, and the lowest, first of which had unlimited jurisdiction. Sometimes there lay an appeal from the seigneur bas justicier to the seigneur haut justicier; otherwise generally to the royal bailliages et sénéchaussées. These were not merely territorial courts of the royal domains; but the officers which constituted the courts were, from the jurisdiction of the feudal courts, their own jurisdiction had been also extended over the estates of the great vassals. The inferior courts of the royal domains were generally called présidets. The superior courts (bailliages et sénéchaussées) were under a bailli, who was not necessarily a lawyer; and, if not, justice was administered in his name by a lieutenant de roye. The superior courts of the large cities were organized by Henry II., in 1551, under the name of présidiaux. They consisted of a chief justice (président) and at least six justices (conseillers). The number was thus large for the purpose of raising money and keeping in the sale of the offices. The supreme tribunals of justice were the parlements, which were created successively from the year 1302, in the different feudal principalities, as they became united with the crown. The principal parliament, which was also the first erected (1302), was the parliament of Paris. (See Parllements.) Its jurisdiction extended over more than half of France, including the provinces of the Isle of France, Picardy, Champagne, Lyons, Berry, Bar, Perche, Poitou, Anjou, Touraine, &c. Those who were subject to its jurisdiction were often, therefore, under the necessity of undertaking long journeys in order to obtain justice. It had one first president, nine presidents of the grand chambre, eight presidents of the four other senates or chambers, and 116 active counsellors, who transacted business in seven chambers. Besides these, there was a legion of subalterns, procureurs and avocats (attorneys and advocates) attached to it. The amount of the great officers caps; hence they were called présidants à mortier. The princes of the blood royal, and all peers of the age of twenty-five years, had a seat and vote in the parliament of Paris. This body claimed to make one whole with all the other parlements (that of Toulouse, established in 1444; Grenoble, 1453; Bourdeaux, 1422; Dijon, 1476; Rouen, 1480; Alx, 1501; Rennes, 1553; Pau, 1620; Metz, 1652; Besançon, 1674; Doury, 1686; and Nancy, 1775), which was merely divided into different classes; but this pretension was never acknowledged by the crown. It is evident that such a mass of business and with a number of counsellors (members were formed on the same scale) could not be advantageous to the administration of justice; and though there were usually some distinguished and honourable men among the counsellors, yet a great number of ignorant and corrupt members was never wanting. The court had always some in pay, and a considerable amount of money annually distributed among them. All the parlements were called cours souveraines, because no appeal lay from their sentence. Some other judicial tribunals in the provinces also bore that name. By virtue of this sovereignty, they enjoyed certain peculiar privileges. They were, for instance, exempt from the jurisdiction of the royal officers. They were also permitted to give an appeal upon the final decision of the parlements, and to confer on those who were convicted, and who had been found guilty of a capital crime, the privilege of pardon. (See Lebaron. Vol. III.) The sénateurs and Linguei attacked this appalling judicial despotism, which was carried to its perfection under Louis XIV., by the ordonnance criminelle of 1670, establishing the double torture, procur eur général, were obliged, alternately with the president, to pronounce a semi-annual address respecting abuses, and to propose measures for reforming them. In Paris, this was done on the Wednesday after the long vacation; hence the name mercureiale was given to these addresses. The parlements also claimed the power to deviate from the letter of the law, and to apply its spirit, against which the provinces often made remonstrances; hence the proverb, Dieu nous garde de l'équité du parlement. They also claimed the privilege of not being obliged to particularize the crime in their sentences, like the provincial courts, but merely to impose a penalty, cas rogationis, of the great vassals. The independence of the parlements and of the judicial office in general, was increased by their having a perfect property in their places. The venality and hereditary transmission of most public offices (from which only the offices of ministers, intendants, and others, which it was absolutely impossible to expose to sale, were excepted), originated in very early times, but were systematically converted into a means of raising money by Louis XII., and more particularly by Francis I. The states, on every opportunity, remonstrated against this abuse, and sometimes effected their object, as in the case of the abolition of the office of parlement, in 1605, and the sums which had been paid for the offices, and the convenience of raising money by the creation and sale of such places, preserved this abuse until the revolution of 1789. For the judicial offices, including the places of clerk, notary, and procureur (attorney), the state was obliged to refund 450 millions, which was merely the sum that had been paid to the government, and did not include what the actual holders of the offices had paid to their predecessors. Henry IV. made the sale of offices legal, and extended it, according to the plan of a certain Paulet, still farther, by which, for the payment of a certain tax (one tenth of the revenue of the office called annuel, or paulette, from the inventor), the heirs acquired the right to sell the office. As even those persons who were removed from office for crimes, still retained the right to sell the office, it may easily be conceived that the independence of the officers was not more than nominal. Such offices were not vell; there was no desire of promotion to induce any one to distinguish himself, or to be obedient to government. One of the immediate consequences of this institution was the enormous increase of offices. In most cases, two, three, or four officers were appointed to the same office, who exercised its duties alternately, every quarter or every six months. Thus most of the treasuries had two or three receivers each, of whom one managed it a year, and then transferred it to one of his colleagues; the whole financial system was thus thrown into endless confusion. The esprit du corps, nourished by the attempts of the different officers to limit the influence, was favoured by the venality of offices, though by no means advantageously for the nation. The whole class of judges, advocates, &c., considered itself as one body, notwithstanding the constant disputes of the parlements with one another and with the other courts, and was ready to support its members against the government and the nation, even in cases of the most crying injustice. Hence it was so difficult to obtain relief from their superiors against the mistakes and the malice of judges; and many innocent persons were sacrificed to the caprice, the pride, and the ambition of the highest court. (See Labarón. Vol. III.) The revolution of 1789 attacked this appalling judicial despotism, which was carried to its perfection under Louis XIV., by the ordonnance criminelle of 1670.
and giving a great extension to the judicial power. A sentence of death could be passed on the slightest grounds; judges decided on the evidence of an accomplice, and on the judge; and several acknowledged instances of injustice (as in the cases of Lebrun, Langlade, Calais, Monthaill, Laberbe, Desrues, Lalli, &c.), rendered the administration of criminal justice an object of distrust and horror. In the administration of civil justice, the processes were slow, loaded with formalities, and extremely expensive. The salaries of judges were small, but they received fees, which consisted originally, of presents of fruits, sweatmants, spices (hence the fees were called épices), &c., but gradually became obligatory, and were changed into consideration. The fees, according to the working-days (vacations), for each of which a counsellor of parliament received 19½ livres; and it was not uncommon to charge from two to three hundred working-days. The first president was considered, by a legal fiction, present at all the business which came before the parliament, and received his fees accordingly. It was calculated that D'Alligre, the last president of parliament but one, who was celebrated for his avarice, had from 1768 to 1783 received fees for 400 years. Of course, this was in favour of the most abject merchants; but the parliament carried with it so many privileges, nobility, numerous immunities, and so much dignity, that it was much in request, and was usually sold for 60,000 livres. The office of president in Paris brought 500,000 livres. Besides the parliaments, there were, also, boards for the examination of the accounts of the treasuries (chambres des comptes), at Paris, Dijon, Grenoble, Aix, Nantes, Montpellier, Blois, Rouen, Pa, Dole, and Metz, all with numerous officers; and for the decision of revenue cases, thirteen cours des aides, of which, however, only those of Paris, Montpellier, Bourdeaux, Clermont, and Montauban formed separate boards; the other eight were united with the parliaments and chambres des comptes. From these tribunals there was no appeal; they stood on the same footing with the parliaments. These offices had also the same privileges attached to them; and the cours des aides at Paris was highly popular, because it had always protected the nation against the oppressions of the revenue officers and the farmers-general. The same cannot be said of the chambres des comptes, in which the places were, generally, bought by rich citizens for their sons, to provide them with the surest and the most good income. The counsellors of these chambers were not in high repute for learning or talent. Eh! messieurs, si j'avais eu de l'esprit m'aurait-on mis parmi vous, one of the candidates is said to have exclaimed, when he was reproached for his ignorance. As the independence of officers was much too great, so that they could easily impede the measures of government, so also was the power of government too great in the administration of justice. Complaints against the inferior courts could be brought before the intendants, and justice was often compelled to yield to private interests. The crown interfered with the administration of justice, by the right it assumed of issuing lettres de cachet, which enabled it to exercise an arbitrary power over the persons of the subjects, and which were often employed to imprison the innocent, and to deliver the guilty. The great expense of the crown, the desire to manage a trial to further its own views, a special commission was appointed; though this, it must be acknowledged, had become rare in later times. Petitions for annulling the decisions of parliaments could be received by the royal council (conseil du roi), and were generally received with pleasure.

The conseil (that division of it which was called conseil privé, and was composed of twenty-one counsellors of state, two of whom were intendants of finance, under the presidency of the chancellor or keeper of the seals) often reversed the decisions of the superior courts; but their arrêts were held in so little esteem, as to give rise to the proverb, il raisonne comme un arrêt du conseil. The maistres des requêtes, of whom, in 1789, there were seventy-eight, and who served par quartier, brought forward all propositions in the conseil privé. The most injurious consequences arose from this eternal conflict of the superior courts and the crown; the public authority was weakened, and all regard for the laws vanished. The vice versa. But the parliaments accused the parliaments of partiality in all cases in which the interests of rank were involved. One of the most profound inquirers into the French administration, Hieff, attributes to them the failure of all schemes of financial reform, and particularly of the canastres, because they had the richest landed proprietors among their members, and well knew how to relieve themselves and their relations from the taxes which they were legally bound to pay. France groaned under two insufferable burdens—an antiquated feudal system, and the venality of offices. The consequence of placing the parliaments in the hands of the richest landholders. Another consequence of the venality of offices, assisted by the exertions of the parliaments to prevent the entrance of new families into their corporations, was, that the majority in these bodies, at last, was always preserved to that class. Besides this, the parliaments meddled with every thing. They protected the Jansenists against the archbishop of Paris, Christophe de Beaufont (died 1784). The archbishop prohibited the Jansenists priests from administering the sacraments; the parliament issued threats of punishment against the priests who should obey the archbishop; the council of state annulled the decrees of the parliament, which repeated them on the next day. "This anarchy," said Voltaire, in 1775 (Histoire du Parlement de Paris), "cannot last. Either the crown must resume the necessary power, or the sovereignty must pass to the parliaments." The first did not succeed; the second led to the revolution, which therefore originated with the higher classes.

Organization and Administration of Government. Although the power of the government was limited by the aristocratic vassals, the municipal governments were developed for some time without restraint. They chose their own magistrates, in most cases, without being subject to the royal approbation; they made their own laws; they exercised the right of self-defence, and occupied an important station among the lords of the soil; they were more important to the kings than the new municipal government, composed of contributions of men and land; they were convoked as the third estate in the states-general from the fourteenth century. Francis I. and Henry II. made the first encroachments on the liberties of the cities. The reign of Louis XIV. was fatal to them. Hereditary and venal offices were erected in the
cities (royal attorneys, city clerks, maîtres, assessors, and municipal counsellors), which thus lost the right of electing their magistrates. Some, however, maintained their old constitution, by purchasing the offices of the king, and electing the officers as they had always done. Among these was Paris, in which the king purchased the office (prévôt des marchands), but the four échevins (corresponding somewhat to aldermen) were elected by the notables of the city; the twenty-six municipal counsellors and the sixteen chiefs of the quarters of the city, had their places by inheritance. On the whole, however, to enjoy a sort of election real or fancied, without influence or power. 2. The provincial administration was, as we have mentioned above, in the hands of the intendants, who governed pretty much like pachas. The administration of the finances was partly in the hands of royal officers, with hereditary and venal offices, partly farmed out. The last practice was among the most crying evils of the old régime. The fact already mentioned, that the royal treasuries had, regularly, two or even three receivers, who were changed annually, rendered the direction of the whole impossible, even for the most experienced minister of finances, as an examination would have shown. In four years, besides the swarm of officers rendered the administration of the finances very expensive. The taxes on consumption, via., the monopoly of salt and tobacco, the internal customs, the excise of the city of Paris, and the tax on liquors in the country, were farmed out. The forty-four farmers-general, with their subalterns, were in the highest degree odious to the people. (See Farmers-General.) Notwithstanding the attempts to limit their profits as much as possible, it was evident that their incomes were very large, and easily obtained; and, though there were among them some men of merit, as Helvétius, Lavosier, De la Borde, and though others made a noble use of their riches, yet, as a body, the farmers-general contributed greatly to render the government odious, by their prodigal expenditure of wealth which had been wrung from a suffering nation. They were called the leeches of the state. Their luxurious habits, their jaded egotism, their hard-heartedness, rendered them a standing character on the stage. The most intelligent men were opposed to farming the taxes, because the expense of collecting them was much greater in this way; according to Necker, it amounted to 16.1 per cent., while the collection of those managed by the department cost only 8 per cent. But the farmers-general were closely connected with the actual ruling powers of France—the nobility and the coteries of the court—since all who had any influence had free access to their coffers, so that no minister dared to touch these pillars of the state, as they were sarcastically styled. "You will be astonished," said a courtier to the court-banker, De la Borde, "that I, who have not the honour of your acquaintance, ask you for a loan of 100 louis d'ors." "And you," replied the banker, "will be still more astonished. I, who have the honour of knowing you, should lend this to you." Necker calculated the number of officers employed in collecting the taxes on real and personal estate, and the customs, at 250,000 persons; though most of them united with their offices other occupations. 3. The central government was in the hands of the king, or rather of the ministers and the court. Though the will of the people was thus practically exercised, yet great strength of character was necessary to resist the united force of family influence, and the influence of other persons surrounding the sovereign. No minister could, therefore, hope to find, in the monarch alone, that support which was necessary to carry him successfully through a struggle against abuses. Good and bad ministers, Turgot and Necker as well as Calonne and Brienne, were unable to maintain themselves without reforms, and yet all were wrecked alike on this rock. At the head of the finance department of France, the four secretaries of state, of foreign affairs, of the royal palace, of the navy, and of war—and the controller-general or director-general of the finances. Each of these six heads of departments, who did not always hold the rank of minister, nor always enjoy a sort of election real or fancied, was vested with absolute power. His orders were given in the name of the king, and had the royal signature attached: the king did not, however, sign with his own hand, but the minister had a stamp bearing the royal name, which he attested with his own countersignature. The rank of minister was conferred without any written patent, merely by the royal invitation to a seat in the conseil d'État, but, once conferred, could only be revoked by a formal judgment. Hence it became, in a manner, necessary to exile dismissed ministers to a certain distance from the city. In the conseil d'État, the king heard the reports of the intendants from the provinces; in the conseil des dépôches, for foreign affairs; conseil des finances; and the secret council of war, in which all the secretaries of state and all the ministers had a seat and vote. Another body also bore the name of conseil d'État, consisting of counsellors of state and maîtres des requêtes, under the presidency of the chancellor, or keeper of the seals. This was a judicial body, which received appeals from the superior courts, decided questions of conflicting jurisdiction, &c. It was also called, in contradistinction from the other council of state, above-mentioned, the conseil d'État privé or conseil des parties. The grand conseil was another superior tribunal, consisting of five presidents, fifty-four counsellors, &c., whose jurisdiction in matters of which it took cognizance, as in disputes relating to ecclesiastical benefices, bankruptcies, usury, certain feudal taxes, &c., extended over the whole kingdom. From them the intendants had to collect their revenues and pay them, and little wonder that the chancellor (keeper of the seals), two grands rapporteurs, four grands auditeurs, &c., all letters of nobility and of official appointments, acts of legitimation, naturalization, &c., were issued. From a consideration of the foregoing statements, we shall easily be convinced that, in the administration of France, it was no matter of the revenues for the lower classes than to secure the welfare of the nation. This principle of considering France as a greatief of the nobility, and the nation as their bond slaves, was likewise faithfully acted on, both in the manner of raising the taxes and in that of spending them. 4. The system of taxation pressed heavily only upon the peasant and the citizen; the contributions of the clergy and nobility amounted to very little. What the clergy paid fell principally upon the smaller benefices and parishes, and took hardly anything from the income of the higher clergy. Besides, the manner in which the revenues of the larger ecclesiastical estates were spent, contrasted most strongly with the legitimate objects of the church. They were, as has already been observed, merely sinecures for the younger sons of the nobility, who, notwithstanding their clerical character, yielded to no other class in profligacy and licentiousness of morals. First, the clergy were subject to heavy and numerous feudal burdens, corvées (q. v.), and manorial services, and were generally obliged to pay the tithe. From these feudal taxes the clergy and nobility derived the principal part of their income.
They were abolished during the revolution of the last century, first with a small compensation, afterward with none, on the assumption that there remained a mass of property, belonging immediately to the clergy and nobility, of the value of more than 3,000,000,000 francs; to which must be added the large estates of that part of the nobility which did not emigrate. For, from May 17, 1790, until 1801, 2,900,000,000 had been raised by the sale of national domains (estates of the clergy and emigrant nobles); and what remained unsold at that time in the old departments was valued at 340,000,000. These unsold estates, after the restoration of the Bourbons, were given back to their former owners. If we deduct the insult which these great estates, which belonged to the clergy and nobility, from the total property of the nation, we shall find, that, at the highest estimate, but one third remained for small proprietors or for land not owned by either of the privileged classes. This third was alone subject to the taille, which was a tax both on real and personal estate, and yielded a revenue of 95,000,000 annually to the state. Another tax on income, in capitulation (poll tax), was paid by the nobility also, but was comparatively very small, as it amounted only to 41,000,000 a year. A third kind was a tax on income merely chiefly on that from real estate, and which originated consistently of one twentieth of the whole income; hence its name, vingtième. But it was soon doubled (les deux vingtièmes), and afterwards increased by one tenth (4 sous pour livre en sus du premier vingtième); and, in 1782, a third vingtième was established, which was intended to be levied only until the return of peace. The nobility was not legally exempted from these income taxes, but they succeeded, by their connexions, in freeing themselves almost entirely from them. The deux vingtièmes with the addition of four sous, amounted to 58,000,000; so that the net income of the nation, at this rate, would have amounted to only 500 millions, which was much less than the real amount.

Pffeiffer, above cited, asserts that a number of the great land owners had a net income of from four to five million livres, which paid only 44,000 livres of taxes, only one tenth of the lawful sum (Schlozer’s Staatsanzeigen, xii. 136); so that this tax also fell almost entirely upon the citizens and peasants. The total amount of the land taxes, before the revolution, was 210,000,000 livres, of which the third estate, though they owned only one third, or perhaps rather of the soil, paid at least three fourths. To this must be added the corvées, or the obligations to make and repair the roads, which fell entirely upon the peasantry, and the value of which Necker estimated at twenty millions. These magnificent roads, which traversed France in all directions, principally for the benefit of the higher classes, because the cross-roads, the most impotent for the farmer, were neglected, were made by the sweat of the oppressed peasants.

Another oppressive burden was the quartering of soldiers, which also fell entirely upon the working class, as the nobility was exempted from it. It was necessary to furnish the soldier with lodging, fire, light, salt, and washing, and, where cavalry was quartered, also with fodder for their horses. The third estate alone were obliged to do military duty. 60,000 men were annually drafted by lot for the land service, who were only paid 15 sous a day. It is to be noticed that the annual cost of these wars, this conscription produced. But it was the magnitude, and still more the absurdity of the indirect taxes, that drove the people to despair. The internal customs between the different provinces (traités) have already been mentioned; they were farmed. The imposts on

liquors, with some others, were managed by the government, and amounted to fifty-two millions. The tobacco monopoly of the state, together with the rents on the interior and on the frontiers, the duties on colonial goods, and, particularly, the monopoly of salt, were managed by a company of forty-four farmers-general, who, towards the end of that abominable administration, paid 180 millions to government. A third of this sum came from the sale of salt—an article which is used by the poorest almost in equal quantity with the richest. These sixty millions of lives, which flowed from the salt trade into the royal treasury, were by no means the whole sum paid by the nation; besides this, there were the profits of the farmers-general, the salt used by the army, which was supplied by a forced arm which was maintained to suppress smuggling, estimated together at about twenty millions. The price of a hundred weight of salt, which, if left free of duty, might have been bought for 15 livres, and, in some provinces, for less, if the manufacture had not been limited, was raised, in some parts of the country, by the gabelle, or salt tax, to the monstrous price of sixty-two livres. It is hardly necessary to observe how much the agricultural classes must have suffered by the artificial scarcity of so indispensable an article; but the worst effect of the tax was to make it a tax that which is necessary, a tax that has no justification in the relation between the nation and the government. This tax had distorted the ancient provincial constitution of France. France was divided, in respect to the salt trade, into six classes of districts, which were very confusedly intermingled—1. Provinces francaises, those districts in which the salt trade had remained free, and salt was, therefore, to be had at its real value. These were chiefly those provinces in which sea-salt was manufactured—Brittany, part of Poitou, Navarre, in which a hundred weight cost 15—2 livres, the French Netherlands, where it cost 7—8 livres; 2. the provinces rédémées, which had purchased exemption from the salt tax under Henry II., for the sum of 1,700,000 livres. They obtained their salt from the manufacturies of sea-salt of Saintonge and Poitou, which, after paying the customs, cost them from 6 to 10 livres per cwt. Guisnez, Poitou, Auvergne, and much of the south of France in general, belonged to this class. 3. Lower Normandy manufactured sea-salt, of which, in earlier times, she gave a quarter to the king; hence the name of pays de quart bouillon. This quarter was afterwards commuted into a tax in money, by which the price of the salt was raised to 15 sous, the pays de salines, which were supplied from salt mines, Alsace, Franche-Comté, Lorraine, and the three bishoprics (Metz, Toul, and Verdun), obtained salt for 12, 15, 27, and 36 livres. 5. The pays de petites gabelles (we pass over some of the smaller distinctions) consisted of Provence, Languedoc, Dauphine, Léonnais; in short, a great part of the south of France. They obtained their salt from the Mediterranean sea, for from 22 to 40 livres per cwt. 6. The pays de grandes gabelles, or the central provinces of northern France, Isle-de-France, Normandy, Picardy, Champagne, Orleans, Tournai, about one third of France, paid the highest taxes, or two thirds of the whole salt-tax (about 40,000,000) was drawn from them. The price of salt was, in these countries, from 54 to 62 livres. The most important consequence of this establishment was, that the people were in such a situation as to be convinced, that the smuggling of salt (faux savange) became the general occupation of vagrants and criminals. By smuggling a cwt. of salt over the frontiers of Brittany to Maine or Anjou, twelve dollars could be earned in an hour. Even the carrying a few pounds in the pocket was equal to a day’s wages. The salt-
trade required an army of officers, and, as the smugglers were armed, soldiers were also necessary. A body of bold and desperate men was, therefore, constituted, with power usually occupied with the trials of smugglers. There were generally about 1800 of them in the prisons, and it was considered a remarkable year, if more than 300 were not sentenced to the galleries. However severe the punishment might be, it could not deter men from smuggling in this business. Some people considered this war against the government officers rather meritorious than otherwise; and, as the farmers-general, every year, seized the whole property of many persons for arrears of taxes, they were driven to an employment in which the risk was counter-balanced by the great profits. To this list of oppressions must be added the interdiction of all trade in corn between the different provinces. Colbert, the author of this system, expected to effect by it the reduction of the price of grain, for the purpose of encouraging manufactures. What, under his administration, was a mistake in theory, became, under his successors, and particularly in the reign of Louis XV., a new source of oppression. The intendants, without whose permission no grain could be exported from their généralité, granted this permission only for bribes.—Capitalists raised the price of grain by buying it up largely, in order to sell it again, at enhanced prices, when the farmers were compelled to keep bread at a fixed price at the expense of the royal treasury. It is known, that Louis XV. partook in these infamous speculations. Agriculture fell into decay, and in some parts of the country, particularly in large cities, much suffering was caused by dearth. When, however, Turgot, under Louis XVI., abol-ished the restrictions on the corn trade, his enemies succeeded in so far blinding the people to their own interest as to be able to excite great disturbances against him. It is true, that, from 1774, free trade in grain was permitted in the interior, but the exportation was in general still prohibited, and agriculture, once depressed, could not easily rise again, as it was charged with so many other bur-dens. The supply of bread for the capital was always a matter which required much attention; and it was easy to alarm the inhabitants on this subject by artful contrivances, as was frequently done during the reign of Louis XVI. Generals were seen, from this sketch of the system of taxation, to what a depth of poverty and misery the lower classes must have been reduced. The slave-trade in the colonies was defended, on the ground, that the slave generally lived much better than the French peasant. "Misery," says Mad. de Staël (Considérations sur la Révolution, I. ch. 6), "produced ignorance, and ignorance, in turn, augmented misery; if, therefore, it is asked, why the people showed themselves so cruel during the revolution, no other cause need be assigned, than that poverty and misery had also produced a moral corruption, which was the more uncheered, as the time of Louis XIV. or, rather, since that of Francis I., the higher classes had set the example of immorality and contempt of every thing sacred in religious observances." The outrages of the revolution were a terrible judgment upon the corruption and oppressions of the higher classes. It has been observed that the taxes were abolished in 1789. But this is a mistake. It is true, that, in 1789, only 582,000,000 passed into the royal treasury; but we must add to this the tithes and feudal taxes which have since been abolished; and, if we consider that all exactions are abolished, and that the taxes are now assessed on the property of the working classes at present pay much less than before the revolution. —At the same time, 5, the waste of the public money, which disgraced the government, has been prevented by the constitutional government of France, and the present government, it is to be hoped, will carry the system of economy much farther than the Bourbons. What could have exasperated the people more than to see the public revenue, wrung from their scanty means, so criminally squandered! The wars of Louis XIV., his buildings, his love of show, did not immit the feelings of the people half so much as the insolent profligacy of a Pampadour and a Dubarry under Louis XV. Under his reign, a custom was introduced into the accounts, which became a source of pride and the greatest disorder—the, so called, acquits à comptant, receipts signed by the king, for moneys which were by no means actually received by him. This was meant as a means of avoiding a statement in the accounts of the sources for which the money was paid. Louis XVI. was not a spendthrift, and, in every thing which regarded himself personally, was a careful economist. Even the Queen Marie Antoinette, who, before the revolution, was accused of prodigality, has been lately defended by a clever witness, Madame Campan; though on this subject more particular explanations are yet wanting. But the abuse of the acquits à comptant, or, as they were also called afterwards, ordonnances au porteur, was continued under Louis XVI., and the sums taken in this way from the treasury, the application of which was scandalously employed, was entered in a private book of the king (livre rouge), amounted, from 1779 to 1787, to 800,000,000: secret services in foreign affairs, and pensions and presents to the courtiers, were the principal items of expenditure. These favours were so freely distributed, that it was impossible to say who could not lay claim to them; and Necker (Administration des Finances, III. 95) devotes a whole chapter to a consideration of the claims of the high nobility, and the duty of a minister of finances to oppose them. Whoever could not produce an ostensible ground for a pension or gratification, offered the king some property or some right for sale, and obtained thus what he wanted. Debts of one of the princes of the blood royal, to the amount of 16,000,000, were paid, in two years; to the useless minister of the marine, Sarthe, considerable sums were granted in a similar way. The notorious Beaujardins received at one time more than 1,000,000: a few have seen the end of their evil was not alone in the weakness of the monarch, but chiefly in the power of the aristocracy; to break down which, even a Richelieu or a Louis XIV., would not probably have found themselves sufficiently strong, and which could be overthrown only by a radical revolution. In addition to this, the royal family was possessed with the unfortunate idea, that what they had most to fear was the people, not the aristocracy, though long before, one of the most judicious politicians of France, the minister of state D'Argenson, had endeavoured to refute this prejudice in his Considérations sur le Gouvernement de la France, 1764. When the question had, at last, before the assembly, it was clear that it must involve the throne in the ruins of the ecclesiastical and feudal tyranny, to which it had attached itself.

V. The Revolution (of the 18th century) and its consequences. —A nation in this condition, with such deeply fixed ideas, and such taxes that were put to such a pulse to urge them to resume, by force, the freedom which the higher classes had wrested from them by centuries of usurpation. All parts of the nation were thoroughly prepared for such an event—the lower orders, by their misery, the cause of which lay before them, and which they saw appear to them in which they were subject; the higher classes of citi-zens, by the hatred with which the overbearing
arrogance of the nobility inspired them. The most
cumtuous appellations (see Canaille) were
plied to them by the nobility, for the purpose of
keeping up a distinction, which the cultivation and
wealth of the people did not always allow. Although
a great part of the nation was deficient in regular
education (the lowest classes of Frenchmen,
before the revolution, were among the most ignorant
of all the Europeans), yet there had been a con-
siderable advancement in the intelligence of the nation;
and, as respect was lavished upon the higher classes,
it was natural that, even without the writings of Vol-
taire and Rousseau, the primitive and natural state
of political society should have become the general sub-
ject of reflection. The foundation of the state on a
social contract, the derivation of all power from the
will of the nation, is by no means an idea of late
origin, as many persons would persuade us; it is the
most natural and the oldest theory of society; and
it had been propagated in France by works which were
read by much greater numbers than Rousseau’s Con-
trat Social—by the works of Fenelon, Bossuet, and
Mme. de la Feuille—whose sermons and discourses
were as read and as listened to as Voltaire’s and
Rousseau’s. History, in the above-mentioned
words, concludes the whole of the earlier periods of
France, like a splendid preface to the Ecrin de la
France. Jefferson says that the whole of this
nation is built upon the principles of the
Declaration of Independence of 1776. The
French Revolution declared the same truths.

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ever been considered by the nation as one of the
greatest benefits of the new order of things. The
tithes paid to the church and ecclesiastical orders
were abolished, and the state took upon itself the
maintenance of the church, and that of all true
religion. The tithes in the possession of laymen
were declared redeemable. The venality and here-
ditary descent of all judicial and magisterial offices,
the exemption of the nobility from taxes, the exclu-
sion of the third estate from military offices, from
all places at court, and even the king, who should
have been the true representative of the people,
the church, the provincial estates and privileges, the
annates of the pope, and other abuses in the church,
were abolished. A new order of things was estab-
lished, and the revolution accomplished. If, at
a later period, when the redemption of the feudal
services proceeded too slowly, they were absolutely
abolished without indemnification, this was merely
an anticipation of the natural course of things; it
was not a change of the new order. Much has
been said against the justice of these decrees, and there
is much ground for argument. If the former destruc-
tion of free municipal oligarchies, which gave
away the constitution of the 36, gave us an account,
its abolition was equally so; for both changes arose from the
character of the times. If the necessity of protection
in a state of brute force, when there was no legal secu-
arity, once drove the freemen into bondage, yet, when
things were changed, and the power of the state came
to depend on the people at large, the good order and
security of the state required that the people should
be set free from their feudal subservience. By those
decrees, France at once reached that point, at which
all the European states must, sooner or later, arrive.
As the imperial government was able to exist, in
France, after those changes, the throne for them;&c.
time might have stood with the new principles, had he
been able and willing to become the leader of the
nation in its reforms. The limitation of the royal
power, which the parliaments, clergy, and nobility
constantly contended for, and in many cases effected,
would have satisfied the national assembly, if they had
not been obliged, by the court itself, to leave as
little power to the king as possible, because even
this little was used to annull, in secret, what had
been publicly sanctioned. Even the royalists, in the
struggles which have taken place in the French
chambers since the restoration of the Bourbons,
contended for the same constitutional restrictions on
the monarch, which have been demanded by
their opponents of the left side. They only differ from
their opponents by wishing to be themselves deposi-
taries of all the power taken from the king.

The independence of the judiciary, a share in legislation,
the responsibility of ministers, the right of granting
the taxes, and even the liberty of the press, have
been contended for as warmly by the royalists as by
the liberals, with this difference, only, that they
claimed in addition, restoration of the privileges lost
in 1789; or, at least, an abolition of the
exclusive right to seats in both chambers, so far, at
least, as only to share it with the magistrates of some
large towns; exclusive right to all offices of trust
and honour. None could be absurd enough to go
beyond this, to the restoration of tithes, corvées, feu-
dal tribunals of justice, &c.

In regard to the judicial relations of France, the
principal effects of the revolution may be described
as follows:—1. A more general division of landed
property. It has been already remarked, that, from
May, 1790, until the end of 1800, national domains
were mostly estates of the church and of the religious
orders, as a reluctance existing to buy the estates
of the emigrants. These estates were generally sold

1. Relations of church and state.
at very low prices, partly because many did not believe their possession certain, partly because there were not many buyers capable of paying their full value. Towards the end of 1800, there were national domains of the value of 700,000,000 still remaining unpaid (3,160,000 in the old provinces and 1,700,000 in the conquered provinces (so called) and 290,000,000 in national woods). Among these, there were many estates of the church, which were used to constitute the funds of the legion of honour and of the senatorships. According to an old work (Le Cabinet du Roi Contenant l'Archives Nationale, Strasbourg, 1624), the property of the church in ancient France consisted (with the exception of the foreign clergy, so called, mentioned above), of 180,000 fee's (of which 83,000 laid superior courts), 249,000 farms and meauteries, 1,700,000 acres of vineyards (besides 405,000 acres, from which they received one-third or one-fourth of the wine), 600,000 acres of unoccupied land, 132,000 of ponds, 900,000 acres of meadow land, 245,000 water wheels in flour and paper mills, iron works, &c., 1,600,000 acres of woods, 1,400,000 acres of pasture. The greater part of the soil was also subject to the tithe to the clergy, and not a particle of the property in which there was no mortgage, rent, or religious foundation (an annual tax of from 5, 10, to 50 sous for a mass, a burning lamp, &c.); even the royal domains were not exempt. 2. This mass of landed property is now divided among a great number of smaller or larger proprietors, and thus, with the abolition of the feudal system, was created a class of free proprietors of the soil, so necessary for the safety and liberty of a state. The subdivision of the soil appears from the fact, that of the numerous class of landed proprietors (about 5,000,000), who pay taxes, there were, in 1820, only 90,000 who held to pay an annual tax of 300 francs and over, and, consequently, could vote in the election of deputies. The number of electors was afterwards considerably diminished by the division of property and the diminution of the land tax. (In the lists of 1818, there are, altogether, 10,414,121 taxable persons, of whom only 40,773 paid an annual tax of 100 francs, and of these, to- gether, paid one-fifth of the land tax, which paid four-fifths.) By the budget of 1822, it appeared that only 216,000,000 were then paid by the whole mass of real estate, while, before the revolution, the smaller portion of it paid 170,000,000. It appears from this single fact, that the burdens of France are lowered, it is said, than before the revolution. The comparison, however, is not complete, unless we consider, also, the abolition of the tithes, the corvées, the quartering of soldiers, and the feudal privileges. This division of the soil into small properties, which is naturally connected with a more careful cultivation, must be considered as the chief cause of the rapid increase of the population of France. Within thirty years, it has increased one-fifth. It was, in 1789, a matter of great dispute whether France had more than 20,000,000 of inhabi- tants. Those who estimated it highest never rated it at more than 25,000,000. After all the destructions of the revolution, and of the population amounted, in 1821, to 30,465,291. We are far from considering the increase of population as the chief aim of states, or even as the principal standard of public welfare; but, in most cases, it will be found a proof of public prosperity. 3. The distribution of property is secured by the civil code, which requires that all estates should be divisible. The power of creating entail was very limited before the revolution, and, by the laws of August 25, and October 25, 1792, such restrictions on the free disposal of property were abolished altogether. Napo-
account of the state, it is now very simple. The municipal constitutions remained, as we have already mentioned, in entire and intentional neglect under the Bourbons. From 1814, the councils of the communes were not regularly appointed. (See De l'Organisation de la Paix publique dans l'Intérêt Mutuel des deux Parties, and also the minds of the French, which were at last silenced to become obsolete, and new ones were not substituted. Ministers could never agree on this nice point, as it necessarily brought aristocratic or democratic principles into collision. No impartial observer can overlook the great difference between the French language, and partly by the mixture of words and expressions originally Frankish, Burgundian, Ostrogothic, or Visigothic. This corrupt language was called the Romanice, and was divided into two branches. They are denominated from their respective terms for expressing yes. The Southern, or langue d'Oc (dialect of Oc, Occitanic dialect), and the Northern, spoken north of the Loire, or langue d'Ouyı or d'Oil, from the latter of which the modern French language is derived. In the beginning of the twelfth century, Raymond de St. Gilles, count of Provence, united the south of France under one government, and gave the whole the name of Provence. From that period, the two dialects were called the Provençal and the French. The former, though much changed, is still the dialect of the common people in Provence, Languedoc, Catalonia, Valencia, Majorca, Minorca, and Sardinia, the Val d'Aoste, Venetian, and Norman French dialect, which was much more precise than the former, gained the ascendancy. This was partly owing to the influence of the Conteurs, who roamed into all parts of the country, but chiefly to the circumstance that Paris became the centre of refuges for expatriated writers. The langue d'Ouıy was deficient, from its origin, in that rhythm, which exists in the Italian and Spanish languages. It was formed rather by an abbreviation than by a harmonious transformation of the Latin. The Franks and Normans deprived the Latin words of their characteristic terminations, substituting, in their stead, the obscure German vowel, which was afterwards entirely dropped in conversation, and retained only in singing and orthography. With the exception of these differences, the French Romance dialect was formed on the same grammatical model as the Italian, Spanish, and Portuguese. A regular accentuation of syllables, according to their quantity, was at first preserved; but the metrical character of the language was gradually lost. The French thus became more accustomed to a rhetorical measure than to poetical forms. The nature of the language itself led them to allow the arts of rhetoric, and the natural liveliness contributed essentially to encourage this declivity. Francis I. established a professorship of the French language at Paris, in 1539, and banished Latin from the courts of justice and public documents. Cardinal Richelieu, by establishing the Académie (Académie Française, or des Quarentze), in 1635, carried the language to a higher degree of perfection. The French academy became the supreme tribunal both for the language and literature. It put an end to the arbitrary power of usage, and fixed the standard of pure French; but it deprived genius of its prerogative of extending the dominion of the language, and approved the academy unless it was received at count, and nothing was tolerated by the public which had not been sanctioned by the academy. The language now acquired the most admirable precision, and thus recommended itself, not only as the language of science, but of all polite literature. It was capable of conveying the most discriminating observations on character and manners, and the most delicate expressions of civility which involve no obligation. Hence its adoption, as the court language, in so many European countries. But when fancy or deep feeling sought utterance, then genius was compelled to yield to the despotic laws which rejected every turn that was proscribed at court and by the curiously academy. In the reign of Louis XIV., the superiority of the French writers, the custom of visiting France, and the great number of refugees and French instructors in other countries, contributed to the diffusion of the language universal. From this time it also became the common language of diplomacy on the continent of Europe. During and since the revolution of 1789, new words and turns have been introduced, many of which have become a part of the language (of the revolutionary words and phrases, a particular dictionary exists by Suelage). Among the dictionaries of the French language, that of the academy holds the first rank. It first appeared in 1694 (two vols. folio), and has since been repeatedly republished (last edition, 1822, 2 vols. 4to). Those of Richelet (new edition by Goujet), Furetâère (new edition by Bausage, Beaulieu, and La Rivière), Tréver, and Boiste, deserv to be mentioned. For the inquirer into the old French dialect, the Recherches des Antiquités de la Langue Française, ou Dictionnaire Gaulois, par P. B. (Pierre Borel, Paris, 1667, 4to), is interesting. Among the best grammatical treatises are the grammars of Walther, Rue- stau, De Lavall, Maxin, Le Tellier, and Duvivier's Grammaire des Grammairians, &c. Girard's Dictionary of Synonyms (new editions by D'Olivet, by Buzauz, and considerably augmented by Roubaud), is an excellent work.

French Literature. Although Charlemagne had done much for the advancement of the French language, yet, at the time when Dante was laying the foundation of a classical national literature in Italy, the French had made less progress in literature than the Spanish and Portuguese. The north and south of France were entirely distinct in their literatures until the sixteenth century. The Normans, who contributed much to give a new impulse to the imagination of the European nations in general, exercised a decided influence upon the north of France; they carried the love of the wonderful along with them from their native land; their imagination was bold and inventive, rather than tender and glowing. They were valiant, rather than enthusiastic. They were fond of heroic, wonderful, and merry tales, and their songs were composed in quite a different style and metre from those of the southern French. In these the Provençals preserved a character akin to that of the Italiano; that of the French was more refined than the poetical, and poetry awoke in the north of France. But when the French monarchy fixed its centre in the metropolis of Paris, the north acquired the ascendancy, while the poetry of the Provençals sank into oblivion. Their literature belongs to the history of the middle ages. The same romantic spirit, which
at that time pervaded and animated all the European nations, in the north of France united the charms of poetry to all the forms of society. The same chivalrous gallantry flowed out in poetical strains on the banks of the Seine, the Arno, and the Tagus. This spirit, kindly current to the cultivation of Champagne, sang in the service of the lady of his heart, as a Troubadour. But the French poetry was rather a display of ingenuity and wit than the language of passion and deep feelings. At that period, only the rude poetry, displayed in the romances of chivalry, could gratify the taste of the French; but as soon as chivalry passed away, there was a need of poetry which should not become its successor. This need, therefore, gave birth to a new kind of poetry which owed its character to it began to fade gradually, and the literature passed over, through the airy, gay fabliaux, into the entertaining anecdotes. The university of Paris, which had been founded as early as the twelfth century, became the seat of scholastic philosophy and theology. Here the scholastic system of dialectics was cherished and cultivated, and, through its influence, the literature took such a turn as ever after to incline more to eloquence than poetry. The French aimed, earlier than any other modern nation, at a natural prose. Clearness, precision, euphony, a good structure of the sentences, and a picturesque element, are the characteristics of the French proses by which it passed on to classical excellence, particularly in the reign of Louis XIV., the golden age of French literature. Such a style was not consistent either with depth or enthusiasm of expression; and Voltaire's remark, "Whatever is not clear, is not French," is applicable to the whole of French literature down to the revolution, since which, French genius in letters and the arts has been under less subjection to the tyranny of criticism than formerly. In giving a view of the most interesting points in the history of this rich literature, we shall take Chevlier's Tableau Historique de la Littérature Françoise for our guide, referring, for further information, to the Histoire littéraire de la France, commenced by the Benedictines of the congregation of St. Maur, and continued by the members of the Institute, (Acad. des inscript. et belles-lettres.)

France. Fifty years after Bacon had explained the difference between practical and philosophical grammar, Lancelot, under the direction of Arnaud, wrote L'âme de Port-Royal—a universal grammar, with which the scientific literature of the French commences. Robert and Henry Stephens, who lived in the reign of Henry II., were the first writers on the French language. Since the establishment of the academy, Vangelas, T. Corneille, Patru, Ménage, Bouhours, Beauzée, Desmarais, &c., have written on this subject. Girard, by his Synonymes; D'olivet, by his Traité on Prosody; and Dumarsais, by his Remarks on Figurative Expressions, settled the rules of the language. A clear light was shed upon them by Coreillée's Grammaire générale, which is esteemed a master work. Domergue distinguished himself as a grammarian, and introduced many judicious innovations. Lemare's Cours théorique et pratique de la Langue Française is an important work. Marmontel also displayed much acuteness and taste in his Lécons d'un Père. The influence of the valuable Dictionnaire de l'Académie, has already been mentioned.

Rhetoric and Criticism. The French works on rhetoric and criticism are numerous, but many of them have lost their former celebrity. Who would feel inclined, in our times, to study the laws of poetry with those of the ancients? Rollin's Traité des Études will always be esteemed as an elementary work, on account of its clearness. Betteau's Cours des Belles-Lettres, Dubos's work on Poetry and Painting; Diderot's Observations on the Drama; Marmontel's Poétique, with his Éléments de Littérature; Lapin's Réflexions sur l'Usage de l'ÉloQUENCE; Buffier's Traité philosophique de l'Éloquence; Fenelon's Dialogue sur l'Éloquence et le Droit Rhétorique; Corneille's Discours sur la Tragédie; Voltaire's Commentaires sur Corneille, his Mélanges, his Dictionnaire philosophique, his Lettres, and, finally, Thomas's Essai sur les Éloges, are works which made epochs in this branch of literature. One of the most important and instructive works of this kind is certainly the Traité de l'Éloquence of the abbé Arnaud, which, if the productions of more recent times, we must mention Sauvès Mélanges de Littérature, which are distinguished by profound observations, an elegant style, and a correct taste; in this collection, the essays of the abbé Arnaud are of superior merit. The Études sur Molère de Calhava; the Mémoires pour servir à l'Histoire de la Littérature Française, by Palisot; Chamfort's Mémoires, and Ginguéne's writings, are valuable. The latter was engaged, at the time of his death, in his extensive work on Italian literature, the interruption of which is much to be regretted. La Harpe's Mémoires de la Litterature, and the part, is a valuable work: the last volumes betrayed too much prejudice. Madame de Staël's De l'Allemagne, which abounds in ingenious observations, though it contains many inaccuracies, first brought French criticism into connexion with German literature. In scientific works, the French are very rich, and the language is happily adapted to them by its clearness.

Among French works in the departments of Morals, Politics, and Legislation, we mention, first, the Essays of the ingenious Montaigne (born 1533, died 1592), who portrayed men as he found them. His genius and style are of a peculiar cast, and the latter is animated with the most pleasing naïveté. Charron, in his Traité de la Sagesse, exhibits more method but less originality. Pascal is justly numbered among the most distinguished writers in the golden age of French literature. His moral as well as his religious maxims, sons, and his researches, breathe a divine spirit of truth. The natural beauty of his prose has not become obsolete to this day. By his Provinciales, ou Lettres écrites par L. de Montale à un Provinçial de ses Amis, he unveiled and annihilated the casuistry of the Jesuits. We rarely find works in which so much earnestness is so happily blended with the most pleasing manner for the attainment of a great end. His Pensées sur la Religion are heartfelt expositions of moral and religious truth. While this pious scholar was actively employed in his solitude, for the welfare of mankind, the discriminating and penetrating mind of the duke de la Rochefoucauld was ripening in the great theatre of the world. His Maximes are models of classical prose. They are pointed and heartless, but alas! strikingly true in their application to the greater part of mankind. From him the French derived a taste for the epigrammatic manner, and learned to supply the want of moral, serious, and elevated reflections on the passions of the heart. The fame of La Bruyère's work, Les Caractères, is widely spread. The characters of Theophrastus are drawn with the firm hand of a master, but they consist of general forms. La Bruyère understood how to deduce the laws of life from the reflections on the abbé d'Aubignac. Rollin's Traité des Études will always be esteemed as an elementary work, on account of its clearness.
future character of rulers. Never, perhaps, was instruction clothed in a more pleasing and noble garb than in this mythological romance. Fenelon's famous work the Existence of spirits, his Essay on the Education of Females, are likewise distinguished by a tender, pious dignity. Although Montesquieu's Esquisse, and his Lettres à ses Esclaves, do not equal the works just mentioned, yet they imitate them in a manner which does honour to their authors. The works of Voltaire must mention the witty St. Evremond, one of the ablest epicureans, and one of Voltaire's predecessors. As a model of the false eloquence, which was a long time fashionable in France, we cite Fontenelle; he coquets with learning, and utters poor jests on serious matters, merely for the sake of being entertaining; his conversations on astronomy pleased once through this means. At a later period, French literature was indebted to the ingenious widow of Condorcet, for an excellent translation of Smith's Theory of Moral Sentiments, to which she subjoined Letters on Sympathy. The work of Madame de Genlis, De l'Esprit sur l'Happiness de l'Individus et de la Sosie des Eux, is still read with great advantage. Diderot, the founder of the Encyclopaedia of the Practical Man, upon the Happiness of Individuals and Society, presents, like so many other works of this remarkable woman, ingenious views, novel turns, and a rare independence of mind. De Volney's Catechism for the French Citizen, and Saint-Lambert's General Catechism for the French People, are well worth perusal. The nations, notice deserve. At the present day, Duroz has distinguished himself by his work on morals. Degréando's Perfectionnement Moral has much reputation. It has been translated in America (Boston, 1830). The political writers in France commenced with the venerable chancellor of the Hospital. Although at no period the laws were so frequently violated as in the reign of Charles IX., yet the improvement of legislation begins with that epoch. Dumoulin, one of the greatest jurists, contributed much to it. Hubert Languet, under the assumed name of Jamin Brutus, wrote a remarkable work on the lawful power of a prince. La Boetie, Bodin (Jo. Bodinus), Boisguilbert, La Moignon, D'Augues, St Pierre, and Melon are celebrated names in this branch of French literature. The Economies royales, by Sully, must not be forgotten here; he is the most famous of the Monarchistes, for his great work De l'Esprit des Lois; he lived from 1680 to 1755. J. J. Rousseau, in his Contrat social disclosed truths which before had scarcely been suspected. Malby gained reputation by many works, especially by his Enseignement de Phon. Servan, Dupaty, Porbonnais, Targot, distinguished themselves in this department; and Necker's writings on finance are well known. Miraheau will always be celebrated for his bold and powerful productions. No writer, however, in this branch, during the revolution, was more distinguished for sagacity and extensive knowledge than Sieyes. Letron, Barbé-Marbois, Roederer, Struensee, Remours, Garnier, J. B. Say, Ganilh, and Merlin, Perreau, Bourgignon, Bexon, Pastoret, and Laclairet, are able writers on the science of legislation and jurisprudence.

Puljet Elorquenc et Works on Education. Linguet first distinguished himself by his sermons and funeral discourses, in the reign of Louis XIII. Bosse was aware of his own zeal for truth and piety no less than by his splendid eloquence, which bears the character of the age of Louis XIV. His celebrated Oraison funèbres contributed very much to the cultivation of French prose. Bourdeau was his rival, and was acknowledged to be the first of French preachers; he lived from 1632 to 1704. Asimlie and Flechier were popular preachers.

Massilon learned much from these great predecessors, and touched the heart by the most moving language of Christian humility. Among Protestant preachers, See Simon de la Place is distinguished. In his Oraison funèbres, the French literature is very rich. Not to repeat here the works which have been already mentioned, we shall only notice, among the productions of the latest times, the works of Mad. Leprieur de Beaumont, Mad. de Genlis, De Bouilly, Berquin, Ducraux, Dupont, and others. They describe the charming and pleasing style, and adapted to the tender age for which they are designed.

History, Biography. The earliest monuments of French eloquence must be looked for in historical writing; and the first rank among writings of this class is due to the mémoires. The French were always happy in their observation of character and manners, in public as well as private life. The study of their numerous mémoires is now rendered easier by the valuable Collection universelle de Mémoires relatifs à l'Histoire de France, the first eighteen volumes of which contain only those from the thirteenth to the close of the fifteenth century. At the head of the authors of valuable mémoires stands the chevalier Jean de Joinville, who accompanied St Louis in the crusade to Palestine. The honest, warm-hearted simplicity of this writer has all the charm of romance. He wishes, with an honest zeal, to raise a living monument of the life of St Louis. Christine de Pisau, daughter of the astrologer at the court of Charles V., comes next to him. Her style is more graceful, without possessing Joinville's strength and cheerful ease. Philippe de Comines has given a striking picture of the gloomy, hypocritical Louis XI. It is the most ingenious, and, both in point of style and matter, the first among the writers of French memoirs, from the thirteenth to the beginning of the seventeenth century. Froissart wrote a larger historical work, to which he contributed to give an epic character, by the charms of striking narrations. In the memoirs of the life of the chevalier Bayard, are perceived the last traces of the honest simplicity of those old historians and chroniclers. A mixture of this simplicity of former writers, with an assurance that stands unparallelled in historical literature, characterizes the French historians of the eighteenth century. They describe the times of Charles IX. and Henry III., in which the most revolting licentiousness prevailed. Sully portrayed his age in an interesting and dignified manner. It is to be regretted that the learned De Thou wrote in Latin. Mazerol wrote the history of the French monarchy with independence. Pelisson, in relating the conquest of Franche-Comté, is a panegyrist rather than an historian. Varillas filled fifteen volumes in quarto with the history of the period from Louis XI. to the death of Henry III. He is somewhat exaggerated in his manner. St Réal imitated him, but his language is pure. At the same period, Du Bartas, Fr. De Thoyras, and Aubert de Vertot distinguished themselves as historians. The sketch of universal history, by Bossuet, is unique. It contains a comprehensive survey of the great events in the ancient world, in reference to the destiny of man. Cardinal de Retz understood the art of interweaving the most interesting anecdotes, in the most ingenious and vivid manner, into his narration. Bougeant wrote on the peace of Westphalia. Rollin's works are written for the instruction of youth. They exhibit neither genius nor profundity of research, but are good for beginners and amateurs. Cardinal de Retz understood the art of interweaving the most interesting anecdotes, in the most ingenious and vivid manner, into his narration. Bougeant wrote on the peace of Westphalia. Rollin's works are written for the instruction of youth. They exhibit neither genius nor profundity of research, but are good for beginners and amateurs.

Carroll's History of the emperors, and Lebeau's Histoire du Bas-Empire (revised and enlarged by Royon, Paris, 1814, 4 vols.) The ecclesiastical
history of the abbé Claude-Fleury, who lived from 1640 to 1723, is a model of the superior works of M. Marsin. He compiled a chronological survey of French history, continued to the latest times, by Walckenaer. Montesquieu wrote on the Romans, with a Roman spirit. Voltaire, as author of the History of Charles XII., of *l'Essai des Meurs*, and of the History of the Age of Louis XIV., holds a distinguished rank among historians. Dumas, who was a disciple of M. Dumas, is ranked as a modern French historian, and his History of Poland, and his History of Russia, by which Catherine the Great, was raised to the Russian Throne, and his History of Poland, are written with veracity, elegance, and fire. Michaud's *Histoire des Croisades* received the prize of the national institute, in preference to Heeren's work on the same subject. Mme. Beaur's History of the Prussian Monarchy under Frederick the Great is extremely rich, but wants method. But Walckenaer, the Great, himself, must be mentioned here among the French historians, on account of his *Mémoires de Brandenbourg*, and *Histoire de mon Temps*. Thouret's elementary work on the Revolutions in the French Government is a profound and instructive view, written in a simple, solid, and appropriate style. This great work, of which every line breathes a regard for the rights of man and the love of liberty, was written in prison, and the author was led to the scaffold as an enemy of the people. Anquetil and Desodboards have written the history of France. De Ségur's picture of Europe, in his *Histoire des principaux Événemens du Régne de F. Guillaume II.*, *Roi de Prusse*, deserves to be distinguished. Caillard's excellent memoir on the Revolution in Holland (1787) fills almost the whole of the first volume of that work. Rabaut St Etienne's *Précis Historique de la Révolution Française*, two volumes, continued and completed by the younger Lacretelle, five volumes, is esteemed, as is likewise *Précis des Événemens militaires*, written by Math. Dumas. The *Considérations sur les principaux Événemens de la Révolution Française*, a posthumous work of Mad. de Stael, and Mignet's *Histoire de la Révolution Française*, deserve, likewise, an honourable mention here. French literature, in the eighteenth century, included a great number of ancient as well as modern historians of all nations.

**Letters, Travels.** The French epistolary style, which has since been justly considered as a model, and imitated by all Europe, was yet rather unpolished in the age of Richelieu. Henry IV. wrote to the beautiful ladies, to whom he paid his addresses, with the old chivalric tenderness, in a very gallant and complimentary style. The *Lettres de Henry IV.* à *Coriandre d'Andoise*, *Comtesse de Guiche*, ma *Mistresse* (Amsterdam and Paris, 1788) are interesting and well worthy reading. The letters of business of that period were written in the common official style. Even the letters of M. de la Tour du Pin, the lyre poet, are wanting in ease. But Richelieu wrote even his official letters with a manly precision and ease, and not without elegance. They are distinguished by a compressed eloquence and great penetration. It became the general ambition, among the wits of the time, to be understood in the letters, and with the neatness of phrasing, and the vivacity of the French, combined with wit and ease, but without deep feeling, led to a finished epistolatory style. At that period, the word *bel-esprit* first came into vogue, and two of the politest writers at court vied with each other in letter writing. Balzac's *Letters*, and M. de la Tour du Pin's, are masterly, but with a sensibility of feeling which was admired, but considered dry. Vincent de Voiture understood the art of trifling in a more pleasing manner; he was a man of wit, but affected; his gallantries were far-fetched, and his epigrams were written with affectation, and with the seriousness of a schoolmaster. The art of compliment and politeness was admired, but considered dry. Vincent de Voiture understood the art of trifling in a more pleasing manner; he was a man of wit, but affected; his gallantries were far-fetched, and his epigrams were written with affectation, and with the seriousness of a schoolmaster. The art of compliment and politeness was admired, but considered dry. Vincent de Voiture understood
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is that of Paris 1521, folio. Towards the close of the thirteenth century, an allegoric-romantic poem was written by Jacques Gelece, under the title of Le Roman du nouveau Renard, which was, probably, the first imitation of the fables of Aesop. A translation of Féockh (Renard the Fox) ; and, in 1530, an ecclesiastic, by the name of Deguilleville, wrote three large religious allegories, founded on the idea of a pilgrimage. The hundred tales of Margaret, queen of Navarre, sister of Francis I., L'Heptameron ou l'Histoire des amans, fortunés à très-illustre et très-célebres princesses, was written about the same time; and the Faux Renart de Boccaccio, which is a translation into French of the sixteenth century, the age of more than ninety years. The ladies appear to have felt a special call for the cultivation of this field, and by their efforts the romance gradually descended into the sphere of realities. The historical novels of Montesquieu's Histoire des Deux Jupes, with a very favourable reception; she had the art of giving to them the colouring of true history. Madame de Villedieu made it her peculiar business to metamorphose anecdotes from ancient history into tales of gallantry. Her Galanteries Grénaudines are written in the Spanish style of Don Quixote and 2 'vogue. The Arabian Thousand and One Nights, which were translated into France by Antoine Galland, found numerous imitators. The Contes de ma Mère l'Oye, written by Perrault, and the Tales of the Countess d'Amour, were very much read. Hamilton's stories were distinguished for wit and boldness of imagination; even the venerable Penelop wrote fairy tales for the instruction of the duke of Burgundy. The romances of the countess de la Fayette were much admired, and her Princesse de Clèves will always be ranked among the best historic novels; her Zaida is distinguished for elegance of style and tenderness of feeling. The fame of these romances was not so great. Paul Scarron, well known for his wit, and his marriage with Mlle. d'Aubigné, afterwards marchioness de Maintenon, displayed the talents which afforded so much amusement to his contemporaries, in his Le Roman comique. He portrays successfully the comic in situations. His sallies are bold, but his humour is often insipid and verbose. The novels of Lesage are in imitation of Spanish works. His Gu Hila, and Diable Boiteux, were universally admired; besides these, he left six other works of the same kind. The Roman Bourgeois de Furetière, was read for a time, and then forgotten. The invention of the domestic novel belongs to the English. The abbé Prevot translated the works of Richardson; and his own novels, Cleveland, Le Doyen de Katterine, and particularly Manon Lescaut, touch the heart. The same may be said of Segrais's novels. In Montesquieu's Lettres Persanes, fiction serves merely to convey philosophical satire. In comic novels, as Candide, Zadig, Micromégas, and the Princess of Babylon, Voltaire's genius appears in a striking manner. They are characterized by originality, piquancy, nature, sparkling wit, and an interesting narrative. He was followed by his disciple J. Rameau, whose Héloïse, by its overpowering eloquence and glowing pictures of the passions, excited universal admiration. Marivaux, Diderot (whose James the Fatalist, and The Nun, are among the earliest moral novels, although he afterwards disgraced himself by his Les Bijoux indiscrets), Metastasius de Tencio, de Graffeniry, and Richepin, Marmontel—in his Bétis- aire, Incas, and Contes moraux—were distinguished in this class. Florian showed how the historical romance may be combined with the romance of chivalry, in his Gonzalve de Cordove; he succeeded in reviving the pastoral novel, by his free imitation of the Galatea of Cervantes, and by his own lovely novel, Estella. The younger Crébillon, than whom no writer better understood the art of combining the most voluptuous situations with a nice description of character, stands at the head of a long series of writers of frivolous novels. The works of some of his imitators are distinguished by a clever adherence to the rules of art. Calprenède found an imitator in Mlle. de Scudéry. She wrote seven long-winded novels, of which the first, Clélie, extends through ten octavo volumes. There are also ten volumes of Conversations et Entretiens from the same prolific source. In so young a writer's works, tenderness of sentiment is lost in an affected sensibility, and a shallow stream of words. She died in 1701 at
he won all hearts by his Paul and Virginia, and La Chauviere Indienne. His works are distinguished by charming pictures of nature, a simple and unaffected religious tendency, and his warm and glowing imagination, appear everywhere in his works. His Atala, his René, and his Martyrs, are written in a touching style, but with a tinge of melancholy and mysticism entirely unknown in France before him. The works of Victor Hugo are characterized by wonderful vigour. Among the modern female writers, Madame de Stael is the most distinguished. Her Corinne, ou l'Italie, is a masterpiece. Her Delphine contains many beauties, mixed with many faults. Madame de Genlis was an extremely prolific writer, but of little genius. The romances of Madame Cotin, Malvina, Amélie Mounet-Field, Elizabeth, and Mathilde, are full of tenderness. The works of Madame de Flahaut (subsequently Madame de Sonnay) are written with taste, and display a nice talent of observation, an intimate knowledge of life, and delicacy of feeling. Adèle de Sévérac, Mademoiselle le Tournon, and Eugénie de Rastignac, are amongst the countless works, as good as they are numerous. The Sonnets are called la petite mer de Blanchemain, La Valoisée, Les Quatre Espagnols, Le Manuscrit Trouvé au Mont Pausilippe, by Montjoye, and Valentine, by Madame de Kruideren, rank among the best modern novels. The prolific Pigault le Brun often assumes too much liberty in every respect. Fievre's Dot de Sasset, Salvandy's Alonso, Madame de Montoill's Caroline de Lichtfield, deserve mention.

Poetry. In treating of French poetry, we shall begin with the lyric and light narrative poetry. The oldest Norman French poems were songs. (See Fauchet's De l'Origine de la Langue et Poésie Française.) The romances and fabliaux, however, are older than the chansons. With the Provençals, on the contrary, poetry, properly so called, was the branch of literature first developed. It was called by them the gai science (gaya ciencia), and it breathed the romantic spirit of the south. The first Troubadours probably came from the Provence to the north of France, in the reign of Philip Augustus, towards the close of the twelfth century. Chrétién de Troyes, who translated the romances of the round table into Norman French verse, is considered to have been the first who imitated the Provençal song in French verse. The Norman Alexander (from whom the name of the lord Alexander) lived between 1180 and 1223, at the court of Philip Augustus, where he composed and sang his life of Alexander the Great in rhymè, which is full of allusions to the deeds of Philip. Thibaut, king of Navarre, addressed to the lady of his love, Blanche, queen of Castille, songs written in the simple style of the Provençal lays, with deviations which sometimes resemble the canzoni. Almost all his songs consist of five strophes, the last of which concludes with the Provençal close (envoi), which the Italians retained in their canzoni. The language is as different from modern French as the language of the Suebian minnesingers from modern German. The Normans and the Provençal Troubadours saluted each other as brethren in art. The chantalain de Coney became famous by his romantic fate. Messire Thierry de Soissons was one of the chivalric poets who accompanied St Louis to the East. To this period belong the songs of Hymen de Normand du XII. Siècle (Paris, 1889, 2 vols.). The songs of many French poets of the fourteenth century surprise us by the similarity of their metres to those of the old Spanish songs. The celebrated poetess Docte de Troyes lived about that period. Philippe Mouskes of Arras wrote a history of France in verse. Allegory then became popular: Jean Froissart (q. v.), the celebrated historian, introduced the Provençal pastorals into French literature. His poems consisted principally of pastorelles and romances. They were distinguished by the most graceful simplicity and loveliness. We shall also record a great number of lays and virélys by him. He collected part of his poems in the form of a romance, under the title Méliador, or the Knight of the Sun. His allegoric poem, the Paradise of Love, and a religious poem, the Song of Fables, are his favourites. The comic fabliaux, in verse, were in favour in the fifteenth and sixteenth centuries. They are often extremely indecent. This error of mistaking an anecdote in verse for poetry, has survived through all the periods of French literature. Two monks, Coinsi and Farsi, distinguished themselves by their moral and satirical fabliaux. The Provençal lyric poetry was most flourishing in the north of France, during the fifteenth century. The trilet, the quatrain, the king's song, so called, were cherished particularly on account of the burden, which was essential to them, for in it plays of wit could be exhibited. Charles, duke of Orleans, is celebrated as Le Songe, or Le Songe de l'être, is considered as a masterpiece. He was the first of that manuscript collection of songs (Balladiers); but genius of a high order must not be sought among them. To this period belong Clotilde du Vallen-Chalys, Ahin Chartier, Villon, who made his own tricks the theme of his songs, Coquillart, distinguished for coarseness of language, and for licentiousness, and forbois, and Dru Bois, and Bordigné. Michault, Martial d'Auvrigne, Olivier de la Marche, Chastellain, Michel d'Ambioise, &c., belong to the lyric poets of the beginning of the sixteenth century. Their complaints of unrequited love are affected and spiritless. Their comic productions show some power. With Francis I., a prince often rash, but always noble and amiable, chivalric glory threw its last gleam over France. He was himself a poet, but much more distinguished for devotion to all that was truly great and excellent than for poetical merit. He first introduced the study of the classics between Louis XII. and Charles VIII., and was justly called the father of letters. Through the influence of Catherine of Medic, sonnets came into favour. Jean Marot and his son, Clement Marot, make an epoch. Their imitators were called Moraste. Both lived entirely at the court. They were witty prodigies, admired for their talents, but certainly esteemed by none. Elegance is conspicuous in the poems of Marot; but he had no feeling of the dignity and sacredness of the art. He wrote allegories, eclogues, comic poems, elegies, epistles, heroic poems, epigrams, and chansons in great numbers. He was also distinguished for his metrical translations, such as the Iliad and the Odyssey. He had warm friends, and not less violent enemies. Among the former were Mellin le St. Gélas, who, like him, aimed at classical elegance in trifling, and Dole, who was burned as a heretic. Margaret of Navarre and Mary Stuart; queen of Scots wrote songs in French. The Duke of Bedford. The Duke of Bedford was a French somnmeeter. He and his friends formed the pleiades, as they were called, and were the first who gave poetry a more serious and elevated direction. Ronsard was the head of this body, and was still called the prince of French poets in the following century. He boldly discarded the trite allegories and stale conceits of his predecessors, but, like was
destinate of feeling, and ran out into endless subtleties and an empty pomp of phrases. Of the other philosophers, for their literary talents and reputation. Another reform soon became necessary to abolish the Latinizing school of poetry. Bertrand and Desportes became the reformers of taste, and predecessors of the celebrated Malherbe. This writer, who is considered by the French, as the father of their lyric poetry, died in 1637. Regnier distinguished himself by his classical satires and pictures of manners. Théophile Viall ruled Malherbe, and possessed the rare talent of improvisation. The pastors, or bérgeries, then came into vogue. Racan and Mairet distinguished themselves in their first classical lyric poems. Boileau, Gomband and Brebeuf were celebrated. The influence of Aristotle on French poetry was already apparent in the sixteenth century. The lyrical poems of Racine have more elevation of language than poetical merit. Jean la Fontaine, born in 1621, died in 1695, and his work is distinguished by the pure simplicity of description, which sprang from a truly child-like heart, is the characteristic of his fables and contes. The latter are chiefly imitations of Boccaccio, and are sometimes tainted by obscenities. Boileau-Despréaux heartily hated all affectation and extravagance. He had very little imagination, but great clearness of observation. His critical rules had the more influence as he himself followed them minutely. His satires and his Art of Poetry are well known. The writers of his school prided themselves on the severity of their taste. Bernard's songs were popular. At the head of the comic poets of that period were Lullier (Chapelle), Bachamont, Chaulieu, and La Fare. J. B. Rousseau, born in 1669, became celebrated as a lyric writer, who treated every subject with ease. The poésies fugitives now came more and more into favour. Pavillon, St. Pavin, &c., recommended themselves by elegant trifles. Seigneur's eclogues were esteemed. Still more pleasing are those of Madame Deshoulières, who lived from 1634 to 1694, and wrote with feminine tenderness. The idyls of Fontenelle are written with a cold elegance. Louis Racine, the son of the famous tragedian, is distinguished for the earnest piety of his poetry. The sacred odes of Pumplignon, who lived from 1700 to 1784, are noble and full of feeling. Berguin, Léonard de Gaudeloupe, and Madeleine Rose Levesque, distinguished themselves by lovely idyls, in which they imitated Gessner. Among the modern poets, Lebrun's odes rise to a higher flight than most of the French poems. The Épîtres de Parnasse de la République, which were written by Legouvé is distinguished for elegance of style and melody of versification. Three of his poems, Les Souvenirs, La Mélancolie, and Le Mérite des Femmes, met with great success. The fables of Florian, Arnaud, and Ginguené are happy imitations of Lafontaine's; and Andreux, in his Nocturnes sans Souci, reminds us of the manner of that celebrated writer. The early death of Millevoye, whose Amour Maternel et Betzoune are characterized by a pure and deep feeling, was a loss to poetry. The writings of De Boufflers and De Parny prove that no calamities are devoid of poetry. Delille renders human observation into frivolous subjects. Bertin (died in 1790) is the most distinguished elegiac poet. Chénier excelled in idyllic poetry. Of the late lyric writers, Lunarte is the best.

In epic poetry of merit, French literature is very poor. The first epic attempt of any consequence was made by Desmarests-de-St-Belin, a protégé of M. de Sairmone, and Richelieu. He died in 1687 with muchseverity. Desmarests was indeed destitute of what Boileau himself possessed in so high a degree—critical judgment and a chastened taste—but his invention was rich. The plan of his Clivis, though not judicious, displays a rich poetical conception. The machinations of his narrative power, and the pure Christian heaven, partly from the romantic world of enchantment. Far below him was Jean Chapelain, whose Joan of Arc is equalled in length and tediousness only by Scudery's Alaric, or Rome Delivered. Le Moine's St. Louis, ou la sainte Couronve reconquise, is a most monotonous and tiresome epic. Lémontge de-St. Didier sacrificed Clivis anew. Rousard's Franceind must not be forgotten in this catalogue of unfortunate epics. Fénelon's Télémaque is considered, in France, as a masterpiece of epic composition; but, although the noblest tone of reason and morality pervades that work, it is far from the best. Gomband's Marriade of Voltaire is undoubtedly the principal French poem in this department. The plan is well conceived, and the characters well drawn, the descriptions happy, and the language pure and noble; but the whole want of poetical illusion is severely felt throughout. All the two-verse personages are particularly unpleasing. Voltaire stained his fame by his Proculet, to which, however, the rank of the first mock heroic poem in French literature must be given. Madame du Boccage's Colombiade, ou la Foi portée au Nouveau Monde, contains, at least, some beautiful descriptions. Masson's Hébertins is a historical rather than epic. Chateaubriand's Martyrs is ranked by some critics, and perhaps more justly than Télémaque, among the epics. In the mock heroic, besides Boileau, Voltaire stands distinguished by his Lutrin, which the excellence of its invention, and the elaboration of its finish, render classical. Parny's La Guerre des Dieux, Les Rosecroy, and Le Paradis perdu, prove the talents of the author, however offensive to good morals. Les Amours Épiques are only episodes, which Parceval de Grandmaison borrowed from other poets. The Achille à Segros of Luce de Lanceloiv contains fine passages, though the plan is very defective. Baur Lemaître, in his Poèmes Gallicas, imitates Ossian. Creuzé de Lessor's Chevaliers de la Table Ronde (1811) received great and well deserved applause. Less successful were his Amadis de Gaule, and Pairs de Charlemagne, which were intended, according to the original plan of the author, to end with a Table Ronde, a complete picture of the whole period of chivalry. Brebeuf, who lived from 1618 to 1661, first distinguished himself in didactic poetry by his Entretiens Solitaires. Boileau's Art Poétique has been already mentioned. Two didactic poems of the younger Racine, La Bonne Femme et La Grâce, as also Voltaire's Discours sur l'Homme, La Religion Naturelle, et Le Dévastre de Lisbonne, and Dulaert's La Grandeur de Dieu dans les Merveilles de la Nature, deserve to be mentioned. Wattelet wrote a poem on the art of painting, and Dorat attempted to sketch the theory of the drama. The descriptive poems of the English, particularly Thomson's Seasons, have found imitators in France. Of the class of these imitations are Les Saisons, by St Lambert, and Les Mois, by Roucher. Bernard's and Lemierre's didactic poems, L'Art d'Aimer and Les Fastes, are imitations of Ovid. Delille rendered human observation into frivolous subjects. Les Jordins, L'Homme des Champs, in which he imitated Virgil, his La Malheur et la Pitié, and La Conversation. His larger poem, L'imagination, is particularly rich in beautiful descriptions and episodes. Of the valuable work of Lebrun, La Nature,
only a part has been published. La Navigation, by Esnouard; L'Astronomie, by Guidin, Le Miroir des Femmes, by Legouvé; Le Génie de l'Homme, by Clé-nedollé; Les Trois Ages, by Roux, are of superior merit. The last great work of Delille, Les Trois Règnes de la Nature, abounds in beauties. Lamar- tin has been cited in this department of poetry. *Dramatic Poetry.* The present work on the French drama and stage is the Histoire du Théâtre Français depuis son Origine jusqu'à présent (Paris, 1734 and 1756), in fifteen volumes, by the brothers Fr. and Cl. Parfait, who also published a Dictionary des Théâtres de Paris, containing two and five hundred articles. A very curious work on the French theatre is the Contes des Anciens by Patelin, (Paris, 1768), in four volumes. The first reference is given of the actors called les comédiens, which was a class of actors in the time of the Old Regime. Amongst them may be mentioned the name of les comiques, or comedians. The dramatic Troubadours was Faydit. But these performances were so rude that the origin of the true theatre in France, as in the rest of Europe, must be dated from the fourteenth and the beginning of the fifteenth century, with the introduction of the mysteries. In modern as in ancient times, the drama had a religious origin. Towards the end of the reign of Charles V., the songs which the pilgrims used to sing on their return from their pilgrimages, gave the first idea of that kind of dramatic poetry which was called mystery. The performances received the title of mystery or of the seven passions (les sept douleurs de la passion), by letters patent from Charles V., because they represented the passion of our Lord; and, during the reign of Charles VI., Charles VII., and Louis IX., the drama made a rapid progress, notwithstanding the civil wars and the distrait state of France. At first the mysteries, which always represented some biblical or legendary history, were considered rather as acts of devotion than as an amusement; and the religious services in the churches were shortened to give the people time to attend them. But they soon degenerated into mere travesties of the most sacred subjects. The fraternity of thieves took their plays into the open air; afterwards, in a hall, in the hospital of the Trinity, and, at a later period, in the hotel de Bourgogne. The spectators were seated as at present, in rows of seats, rising one above another (étambles), the highest of which was called parolise, the next, the place of the heroic; and the French stage was represented in a long robe, surrounded by angels, seated upon a staging. In the middle of the stage was hell, in the form of a dragon, whose mouth opened to let in and out the devils which appeared during the play. The rest of the stage represented the earth, divided into seven provinces, each belonging to the theatre, in which every thing was supposed to happen which could not be exhibited to the spectators; as the delivery of the virgin, cir-cumcisions, &c. On both sides of the stage were benches, upon which the actors sat in the intervals of their performance, as they never left the stage until they had finished their parts. The mysteries were not divided into acts, but days (journées). A performance lasted as many days as it had such divisions, which were generally so long that the play was interrupted so often that it was necessary for the players to eat. The mysteries were, in fact, long dramatized histories, in which the whole course of a person's life was represented. Historical truth was not much regarded in them. Thus Herod, for instance, was represented as a pagan, and the Roman governor of Judea as a Mohammedan. The tragic and comic were mixed together, in the most ridiculous way. The crucifixion of the Saviour, or the martyrdom of a saint, was succeeded by the buffooneries of the clown. Portions of the play were sung, some even in choruses. The verses were principally iambic lines of different length. Such was the influence of the art. By the side of the mysteries sprung up the plays of the Bazoche—an old corporation of legal and judicial officers, which had the privilege of superintending public festivals. In the reign of Philip the Fair, they had received permission to receive pupils to assist them in their duties. These clerks afterwards formed a corporation, the head of which was called the roi de la Bazoche; and, excited by the success of the mysteries, they invented a new species of plays—the moralities and farces, which they performed under the name of ceurs de la Bazoche. They performed, at first, in private houses; but a theatre was afterwards given them in the royal palace. Some of the pieces displayed much wit and humour, as appears from some remains which have come down to us. The farces, which served as afterpieces to the moralities, were of different kinds, historical, fabulous, comic, &c., and consisted of short lays, in verse, representing characters drawn from real life, with much satirical license and comic power. The most celebrated among them is the witty farce of the Avocat Patetin (probably first represented about 1480), which still maintains itself upon the French stage (as remodelled by Bruyes and Palaprat), and which has had a decided influence on the comic drama of the French. Pierre Blanché is supposed to be the author. The piece is rude as a whole, but the dialogue has a spirit and ease which have ever since characterized the French comedy. The Bazoche plays maintained themselves in favour at Paris for two centuries; but their indecency and personalities became a public scandal. The parliament repeatedly caused the theatres to be shut. In 1645, the actors were all thrown into prison; and, in 1654, the society was abolished. About the same time with this, a third society was formed, called the children without care (enfants sans souse). Its members were young men of good families; their president was called the publicateur de foyetten (publieur de farces); and their performances were called folies (soties). They were satirical plays, having no other object than to lash fools, and to ridicule individuals or bodies of persons in high life. For this purpose, allegorical personification was used, and the children of folly and the satirical cohort of the fairies were made into the service of the world, &c., appeared as acting persons. These soties, performed on stages in public places, were received with great applause, so that the Bazoche exchanged their moralities for them. As early as the time of Charles VI., this gay company received a license, in a curious manner, such a license, that their plays were subjected to the censorship of the parliament, in the reign of Francis I.; and as they evaded the censorship
by using masks and inscriptions, in order to designate individuals, a new order of parliament became necessary. Their most brilliant period was under Louis XII., and, shortly after the famous poet Henry II., who had been tranquillized at last quarter by Margaret of Valois, became a member of the society, which was finally abolished in 1612. Both these latter societies played gratuitously. Not so the brochets de la passion, whose prices the parliament was even obliged to limit. On condition of an annual payment of 400 livres to the great queen of love, they received the exclusive privilege of exhibiting all plays for money at Paris, and thus prevented those societies from performing which occasionally came from the provinces. Meanwhile the acquaintance with the Roman and Greek literature had become more general in France, through the invention of printing. Several tragedies of Sophocles and Euripides, and the comedies of Terence, had appeared in French translations, and thus the French drama, which appeared under Henry II., was silently preparing under Francis I. Jodelle (died 1557), who had been formed in the school of the classics, wrote plays, of which there are few that are not of great interest. Jodelle and which gave the French drama that direction which it has ever since retained. Jodelle conceived the bold idea of making the Greek drama the model of the French, and effected a total reform of the French drama. The first piece of this kind, in French dramatical literature, was his comedy in verses of eighty syllables, Eugène ou le Rencontre, and his tragedy, the Captive Cleopatra (in which we find the ancient chorus), which Jodelle wrote with all the fire of youth, and in which he played himself, with some of his friends, as Remi Belleau and Jean-de-la-Péruse, in 1552. This performance, which occasioned the fall of the old theatre of Paris, was received with the greatest applause, by a numerous audience. Henry II., who was present, rewarded the author with 500 crowns from his private purse. Jodelle's last and best work is the tragedy of Dido, which contains great beauties. Within the next half century after Jodelle, Spain had her Lope de Vega, and England her Shakespeare. Jodelle introduced the strict observance of the three Aristotelian unities, chose the purely historical manner, excluded everything supernatural, and took his subjects from Roman and Greek history; but his personages all speak the language, and the plot was nothing but a slight exaggeration of the rhetorical character of the old tragedy. Jodelle's friends followed in the path which he had opened; they formed the society called the Pléiade Française, of which Ronsard was the most brilliant star. Jodelle was successfully followed by La Peyrouse, author of Medec (appeared in 1555), the first tragedy in the rhymed Alexandrines, which are still used; by Grevin, a writer of comedies; by Massin-de-St-Gelais, author of the tragedy of Sophonisba, in prose; by Jean de la Taille, author of the touching tragedy La Fronde; by Garnier, who, in his chef d'œuvre, Hippolyte (1579), eclipsed all his predecessors, and who was both poet and playwright, and who first ventured to bring other personages besides Greeks, Romans, and Turks, upon the stage, as his Juives and Bradamante show; and by Pierre-de-la-Rivey, who distinguished himself as much in comedy. Thus the second half of the sixteenth century is marked by the birth of the French tragic drama, which French dramatic poetry was formed, with some peculiarities, after the model of the ancient classics. The succeeding poets, until the time of Louis XIII., the prolific Alexander Hardy, of whose 800 plays forty remain on the stage, Nepee, Théophile, &c., contributed little, to the progress of the French drama. Mairé, author of a piece called Sophonisbe, which is still esteemed; Rotrou, whose Vénusia is yet played at the théâtre Française; Duryer, Baro, &c., who united elegance of expression, sound judgment, and a refined taste, went far beyond those who preceded him and treached. He is the great French poet, on whom the French bestow the epithet of great. Medea is his first tragedy; the Cid, Cinna, Polyente, and Rodogune are considered his masterpieces. Jean Racine became the favourite of the nation in tragedy. His first tragedy was Les Frères Ennemis. His Andromaque (1667) was received with as much applause as the Cid had been thirty years before. Racine became the man of his age and his nation. He is the most polished and most elegant of the tragic writers of France. Poetical boldness appeared to him contrary to good taste; the true French tragedian, he maintained model. Athalie is his best piece. Voltaire is the true tragic poet of the French, and his Zaire and Mahomet are admired as masterpieces. Voltaire caused the stage to be enlarged and more highly adorned; but the costume still remained incongruous with the character; Roman and Greek tragedies were played in hoops and long perukes. At the time of the revolution, Talma, guided by David, first reformed this abuse, after the impulse had already been given by Clairon (q. v.). The elder Crebillon closes the list of French tragic writers of the first class. To the second belong Thomas Corneille, Laffosse, Guimondede-la-Touche, Lafrance, Carati, Lemierre, de Beoloi, &c. Diderot introduced the sentimental comedy in his Père de Famille and his Fils Naturel. Among the more recent tragedians are Ducis, who adapted several tragedies of Shakspeare to the French stage, and showed much originality and fire in his Aubert Arnaud, whose tragedies are distinguished by power and tenderness; Legouve, Lermicier, &c. Les Templiers, by Raynouard, his only tragedy, has given him a deserved reputation. The hero of Mantis was the favourite part of Talma. Joury's Sylla, the Fêpje Siciliennes and the Paris of Delavigne, and the Clovis of Viennet, are among the more recent plays. The most valuable of our authors have entered on a new path, overstepping the limits which the imitation of the classics had set to French tragedy, and leaving the declamatory eloquence which had previously formed so essential a part of it. It has been already mentioned, that French comedy originated with the farces of the Basque, particularly with that of the Avolet Patet et and the sotties of the enfans sans souci. Jodelle introduced a reform into the comedy likewise. His first comedy, the Abbot Eugene, in the manner of Terence, was admired by the court and the city. It was the first regular national comedy, with characters adapted to the French language and personages. The wit in it is rude and indecent. In 1562, the brothers De-la-Taille wrote comedies in prose. Attempts were made to unite the favourite pastoral poetry with the drama. The moralities were turned into pastoral plays, in which Christ was the chief personage. The first system of the cultivation of true comedy was continued by Pierre-de-la-Rivey; his comedies were founded chiefly on intrigues and comic surprises. In 1562, the 'brethren of the passion' leased their privilege to a society of actors, which, under the name of troup de la comédie Française, exists to this day. They played in the hotel de Bourgogne. Shortly after, Henry III. filled
France with clowns, whom he brought from Venice. They called themselves i gelosi (people who endo-

voured to please). When they began to play in the
hotel des Invalides, one of the greatest comedies of
the time, to see them. Farces of all kinds became popular;
even Richelleau did not disdain the jokes of the Gros
Guillaume, the clown of the Parisians. The Italian
ariccchino was supplanted in the French farce by the
Tabarin and Turlupin, who played comic parts of
servants, and were extremely popular in the time of
Louis XIV. Corneille first felt the want of a true
character-piece; he was much less restrained by pre-
judices in the comedy than in the tragedy. His
youthful trials in comedy are finer, more correct, and
decent than anything which had been known before in
France, in any comic drama. He had but just
finished his eighteenth year, when he wrote his
comedy Molière. His later work, the Liir, is the first
French comic character-piece of classical value.
As a writer of operas, he distinguished himself by his
Andromedia. The comedy of Racine, Les Plat-
deurs, is full of comic power. But Jean Baptiste
Pierre du Motte Molière, 1663, is truly the head of
French writers of comedy. L'E-
tourdi was the first piece by which he became
known. His theatre soon became the most fre-
quently visited in Paris. His company received the
honorary title comédie ordinaire del roil. We have
thirty-five comedies of his. He played himself, and
always with applause, and communicated his own
spirit to his company. He united the study of nature
with a perfect knowledge of the dramatic art. His
chef d'œuvre, Tartufe, and the Misanthrope, become
models of the higher comedy. To the second class of
his comedies belong the character-pieces in prose,
of which L'Avaro, George Dandin, and Le Bour-
goeus Gentilhomme, are the most celebrated. The
manner of these is more free, and the humour more
broad. He allowed the greatest freedom to his
humour in those pieces in which he often introduced music and pantomime, such as Les Forberies de
Scopin, Monasque de Pourcareugne, and Le Malade
imaginair. The comic was carried, in these pieces,
to a height which it had never reached since the ex-
tinction of the old Greek comedy. Molière's pieces
on festival occasions merely prove the remarkable
versatility of his talent. The French comic writers
kept themselves free from the prejudices which shackled the tragic authors. Pieces of intrigue, Scénes,
less profound than pantomime, are the commonest
of the later poets came so near to Molière, in delicacy and
comic power, as Régard (q. v.), (1647 to 1709).
Dancourt was inexhaustible in the invention of comic
situations. Le Grand was more negligent in his
style, out full of comic merriment. His Aim de tout
le Monde is still performed. Shows and ballets ren-
dered his comedies still more attractive. Baron,
a celebrated actor of his time, endeavoured to imitate
the more elevated character-pieces of Molière.
Dufreny wrote good conversation-pieces. Montfeu-

ey was the first who wrote tragedies in the Spanish
manner, with comic interludes. Parnasse also imi-
tated the Spanish, though not in the same way. He
likewise wrote many popular comic operas for the
théâtre de la foire. Destouches was the first who,
by investigations into the objects of the drama, began
to misapprehend the true nature of comedy, and to
render the comic effect subordinate to the moral aim.
His plays are often poor imitations of Molière,
and contain no character-pieces of his own. By
introducing finer delineations of characters than Destouches,
Bergerac, Boursault, Bruyé, La Font, Palaprat,
and the younger Corneille, were some of the most popu-
lar composers of farces. Since Corneille's Andro-
meda, much had also been done for the opera. The
marquis de Sourdeve founded, in 1699, the académie
royale de musique. The rich imagination and melo-
dious poetry of Quinault fitted him to be the first of
opera writers. He is the most musical poet of his
revolution. Racine, the historian of France, praise-

d him. The pastoral pieces of the latter could please
only in that affected age. Houllier de la Motte wrote
in all branches of the drama, but was not much dis-
tinguished. The comic opera originated from the
circumstance that, in 1707, the popular comedies of
the buffoon were prohibited. Molière's pieces
were then given to the Fauvetilles, and the place of
the dialogue was supplied by pantomime. This change
was so successful, that the interdiction was soon re-
moved. Marivaux's plays are affected and pedantic.
Boissy and St Foix enriched the French theatre with
some wise productions. Piron was famed for his
inexhaustible wit, but only one of his comedies, La
Métromanie, has maintained itself on the stage. He
died 1773. Gresset's Méchant is still esteemed.
Sedaine's comic operas and comedies were popular.
Beaumarchais, whose sentimental pieces had already
obtained applause, delighted the public by his Bar-
lier de Sévres, or L'Assemblée (q. v.), (1693). He
wrote also the celebrated farces and comedies of
Scapin, Tartuffe, Dimi-

rene, and Quinault's
The
d'Harleville's

L'E-
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nure of the day has not escaped the influence of the political events of the age, and of the heated party conflicts which have rent society in France. The literary productions of late years have excited attention in both historical and metaphysical circles. The absorbing political questions, which have engaged the attention of all the thinking part of France. The great number of works on political economy and legislation, which have lately appeared, bear testimony to the great interest taken in these subjects. Destutt de Tracy, in his Droit des Hommes et des Nations, has treated of the legislation, political administration, and metaphysical points. Lamartine, with the aid of his Système universel de Philosophie, has published a work, which has been consulted by many writers of the century. Beugnot’s Histoire de la Société en France au 19ème Siècle (Paris, 1821), may be consulted on this point. The language itself, since the example of Madame de Stael, has not escaped innovations. Lavaux, in his Nouveau Dictionnaire de la Langue Française, armed with the treasures of the language of writers of the seventeenth and eighteenth centuries, attacked the more limited stores of the dictionary of the academy, showing a richness of forms and composition entirely foreign to the compilers of that work. Charles Pougons' Trésor des Origines et Dictionnaire grammatical raisonné de la langue française et de la langue d'Espagne (3d edit., 1829), are valuable works. Great attention has been excited by the metaphysical writings and lectures of Victor Cousin. The works of De Gerando, Larchamniquet, Destutt de Tracy, Anax (Système universel de Philosophie, 8 vols., 1826), Victor Cousin (Essai de Métaphysique sur les Sensations se transforment en Idées, 1824), have also attracted the public mind to the department of metaphysics. The general principles of law, to the study of which Lanjuinais’s work, Sur la Bastonnade et la Flagellation pénale (1825), gave an impulse, and the law of the country, have been more deeply investigated, both historically and scientifically. The intrigues of the clergy have attracted philosophical inquiries towards religion also. Benjamin Constant, in his work De la Religion, considérée dans sa Source, ses Formes et ses Developpemens (2 vols. 1825), has displayed his usual acuteness; while the abbe Menil, in his Essai sur l’Indifférence en Matière de Religion, 8 vols. (8th edition, 1825), and in his smaller work, De la Religion considérée dans ses Rapports avec l’Ordre politique et civil, shows how far impartial inquiry was to be substituted in the place of authority. The history of the regeneration of Greece has been more ably treated in France than in any other country. Among the publications on this subject, is Pouqueville’s Histoire de la Régénération de la Grèce (new edition, 1826), appeared at the moment when Micheau’s Histoire des Croisades (8th edition, 1820), Lefebre’s Histoire du Bas-Empire, 4t. nov. Revue et corrigée par Saint-Martin, retraced the events of the past. Mollin’s Voyages dans la Républ. de Combatie is also favourably distinguished. The profound works of an earlier period have been re-edited (Art de vérifier les Dates, by Allais, and, Art de vérifier les Dates depuis l’Année 1770 jusqu’a nos jours, by Courcelles, 1821), and accompanied by numerous works on French history. Among those which afford materials of earlier history, are Collection des Chroniques nationales, par Buchon; Collections des Mémoires relatifs à l’Histoire de France, by Guizot; Coll. Compil. des Mémoires relatifs à l’Histoire de France, by Guizot; Coll. Compil. des Mémoires relatifs à l’Histoire de France, by Guizot and others, containing national and foreign materials, translated by Constantin. The collections of materials for modern history have kept pace with these (Collection des Mémoires relatifs à la Révolution; Mémoires particuliers pour servir à l’Histoire de la Révolution.) (See Memoirs.) The works of Dufau and Delbarre, Lacaux, and Sismondi, on the history of France and the French, the histories of the revolution, by Mignet, Thiers, Rabaut, and Lacretelle, have been very extensively read. For recent times, Lacretelle’s Histoire de France depuis la Restauration may be consulted. Besides these general works, which have been mentioned in regard to separate periods (Fastes civils de la France depuis l’Ouverture des Notables jusqu’en 1821; Jouffroy’s Fastes de l’Anarchie; (Barginet’s Histoire du Gouvernement fédéral). In regard to the ancient history of France, the learned and ingenious treatises of Guizot (Edouard et les Romains); the works of Destutt de Tracy; the works of Jeanne and Normans; Barante’s Histoire des Ducs de Bourgogne de la Maison de Valois; Beugnot’s Les Juifs à Occident, ou Recherches sur l’Etat civil, le Commerce et la Littérature des Juifs en France, en Italie et en Espagne pendant le moyen Age; Depping’s Histoire des Expéditions maritimes des Normands et de leur Établissement en France au Xme. Siècle; the Histoire de la Ste. Barthélemy d’après les Chroniques, 1826; et Mémoires et Correspondance de Duplessis-Mornay pour servir à l’Histoire de la Réformation, &c., are of great value. Guizot’s History of the French Revolution (Dulauré’s Histoire Physique de Paris (3d edition, 1824), and Histoire des Environs de Paris; Monuments de la France, par Al. de Laborde, ant Antiquités de l’Atasce, par Colbery et Schweighouser. Fiction is obliged to assume the historical garb of Sir Walter Scott’s muse, whose works have been translated and imitated (as in Tristan le Jeuneur ou la France au XVme. Siècle, par Monsieur de Marchangy).) But in this department the productions of Victor Hugo are pre-eminently distinguished. Some novels, however, describe the manners of the age, as Mortonvall’s Tartuffe Moderne, or address themselves to a sickly state of feeling, as the Ourika and Edouard of the princes de Sahn, or Airlincourt’s gloomy pictures, and the countess of Souza’s Comtesse de Pancry. Dramatic literature also presents a great number of works, in which Soumet and Vien-net endeavour to emulate the fame of the old tragic writers; while the sportive Scribe, Delavigne, Gau- de, are also employed. The works of in the scenic and grand Spectacle), bringing forward the strangest subjects, are sure of applause from all quarters. On this subject, Geoffroy’s Cours de Littérature dramatique, and Lemercier’s Remarques sur les bonnes et les mauvaises Innovations dramatiques, may be consulted. The lamented Talma, in his Réflexions sur Lokain et sur l’Art théâtrale, endeavoured to preserve, at least, the traditions of his art. Intercourse with other countries has introduced new opinions on many subjects of literature, entirely opposed to the old rules of French criticism. The partisans of these innovations, are called the romantic school. The classical school may be styled the légitimistes of literature, while the romantic area is a sort of literary liberals, actively engaged in combating old prejudices and errors. (See Le Classique et le Romanistique par Baur Lormain, and Essai sur la Littérature romantique, 1830. At the time when this work was written, the author of the Méditations poétiques, who, by his Chant du Sacre, brought himself within the sunshine of court favour. At the head of the other is Delavigne, author of les Meséniennes. More light than both and more French in ideas and expression, is Beranger, author of Chansons and Chansons nouvelles, which are in higher favour with the public than they were with the attorneys of the crown, under the late dy-
nasty. The monuments of distant periods are also brought to light by the industry of French scholars, as is shown by Latrobe's Travels, and Gaspard de Prony's Recherches sur les Auteurs dans lesquels Lefranc has pu trouver les Sujets de ses Fables. Saît's continuation of Ginguène's Histoire Littéraire de l'Italie is a valuable contribution to the history of literature. Schöll's Hist. de la Littérature Greque (2d edition, 1800), Gaillot's Essai sur la Littérature Persone, the valuable contributions in the Journal Asiatique, and those in the memoirs of learned societies and in the journals (Revue Enclop. Bulletin universel, par Férussac), are well known to the literary public. Barrier's Dictionn. des Ouvrages anonymes et pseudonymes; 2d edition, Remarkable Annual of l'Imprimerie des Aides, 2d edit., as also the Catalogue des Livres imprimés sur l'Éton, prove that bibliography is cultivated in France with zeal and ability. See Boucharlat's Cours de Littérature, faisant Suite au Lycée, de la Harpe, 1826, 2 vols.)

French Mathematics in the 19th Century. In mathematics, pure as well as mixed, the French have been so much distinguished in modern times, by the ardour of their researches and the brilliancy of their results, that the superiority over all the nations of Europe may perhaps be adjudged to them. Considering the importance of the works, rather than the order of the chemical and mathematical sciences, we may mention, for a minute sketch, we may mention among the French mathematicians of this period, first, Laplace (q. v.), who in his Mécanique céleste (Paris, 1823, 5 vols. 4to, translated into English by doctor Bowditch, with extensive notes,) has given the laws of the most complicated motions of the celestial world, and, with the aid of a perfect analysis, has completed the fabric, of which the foundation had been laid by Newton's Philosophie naturalis Principia mathematica. The results of those great calculations are also contained in his Exposition du Système du Monde (4th edition, Paris, 1813, 2 vols.), on which Hassenfratz's Cours de physique céleste (Paris, 1803) is a commentary. France's Traité élémentaire de Mécanique (4th edition, Paris, 1807) is a good introduction to the study of celestial mechanics. The means of further investigation may be found in Lagrange's Mécanique analytique, Prony's Mécanique philosophique, and Chasles' Traité de l'Éclipse. In the branch of astronomy, Lalande had already published the third edition of his Astronome, 3 vols., 4to (in 1792), when Delambre published his Astronome théorique et pratique (Paris, 1814, 3 vols., 4to; Abrégé, 1 vol. 8vo), and Biot supplied the wants of a more extensive public, by his Traité élémentaire d'Astronomie physique (2d edit., Paris, 1811, 3 vols.) Biot's Traité de physique expérimentale et mathématique (Paris, 1816, 4 vols.), of which there is a Précis élémentaire, is the most valuable work of the period on the subject which it treats. In the department of geodesy and topography, Puissant, in his Traité de Géodésie (2d edit., Paris, 1819, 2 vols. 4to), and Réaumur's Traité de Topographie d'Arpentage et de Nivellement (2d edition, Paris, 1820, 4to), has furnished two classical works. In the branch of hydraulics, Prony's Architecture hydraulique bears a high character; and, among the recent works on military mathematics, Gay de Vernon's Traité d'Art militaire et de Fortifications (2 vols. 4to) is an indispensable work. Nor have pure mathematics been less enriched in this period. Lagrange's Théorie des Fonctions analytiques (2d edition, Paris, 1813, 4to), and the same author's Leçons du Calcul des Fonctions, with a commentary, forming a sequel to the preceding, are indispensable as an introduction to the secrets of the higher analysis, which have been exposed in their widest extent by Lacroix, in his Traitè du Calcul différentiel et du Calcul intégral. Paris, 1816; and in his Elements de Mathématique, 5 vols., has always been esteemed. Analytical geometry has been enriched by Biot, in his Essai de Géométrie analytique (5th edition, Paris, 1819); trigonometry by Lacroix, in his Traité de Trigonométrie rectiligne et sphérique (4th edit., Paris, 1813), and descriptive geometry by the same, in his Elémens de Géométrie descriptive (4th edition, Paris, 1819). The recent works on algebra are innumerable; the Complément d'Algèbre (3d edition, Paris, 1804), by Lacroix, deserves to be mentioned. Laplace's analytical and philosophical essay on the doctrine of chances, Essai philosoph. sur les Probabilités (4th edit., Paris, 1819), and Lacroix's Traité du Calcul des Probabilités (Paris, 1816), may conclude this short survey of the most important works in the mathematical department in France during the last century.

French School of Painting. The arts which the Romans had introduced into Gaul were swept away by the devastations of the Normans. The first indications of the revival of painting appear in some miniature pieces which are among the treasures of the royal library. Charles the Bald loved the arts, and invited the most celebrated masters to a court of art. William the Conquer, a great number of fresco paintings were finished. In the reign of Louis VII., the arts began to flourish, particularly painting on glass. The enamel painters, which afterwards became known under the name of Emaus de Limoges, also attained a higher degree of perfection, at that period. With the reign of Louis IX. commences an epoch for the arts. His adventures and expeditions to the Holy Land furnished the artists with interesting materials, as did the adventures of Joan of Arc at a subsequent period. René the Good, the prince of poets, belonged to the celebrated painters of the fifteenth century. His portrait, by himself, is preserved at Aix, in Provence. But the history of French painting properly begins with the reign of Francis I., when it flourished under the influence of the Italians. Leonardo da Vinci went to France in 1515, and died in the arms of the king. Andrea del Sarto went thither, and died there, when not yet forty. Rossini, known under the name of Maître Roux, became first court painter in 1530, and director of the decorations at Fontainebleau. As painting, at that time, was commonly connected with stucco work, Francis I. invited Primaticcio to Paris, and made him his chamberlain. He was followed by many Italians, who formed a colony of artists, like that of the Greeks, in ancient times in Rome. (For information on this point, see the life of Benvenuto Cellini, by himself.) Engravers multiplied the works in Fontainebleau, which constituted a school for the French painters. Francis Clouet, called Janet, and Cornelis of Leyden were its leaders. As they surpassed the work of better cast. The French distinguished themselves particularly in glass, emerald, and miniature painting, and in tapestry. They used art as an instrument of embellishment, rather than as something elevated and sacred; their genius appeared in the technical and academic rather than in the poetical. Beaumarchais, who was invited by pope Julius II. to paint the windows of the Vatican, invited the French artists Claude and Guillaume de Marseille to Rome, to assist him. With Jean Cousin, born at Soacy, near Sens, who was living in 1589, commences the list of celebrated French painters. He was one of the earliest professedly religious and architectural. His paintings on glass, particularly those in the church of
St. Gervais in Paris, are celebrated. His oil-painting representing the day of judgment, in the convent of the Minimes, near Vincennes, was the first historical painting of a considerable size. Francis I, encom- mended to his pupils, and other in the production of works of art, which he collected, uniting with them many excellent works of Leonardo, Raphael, and Michael Angelo. This was the beginning of the museum in Paris. At that time, the manufacture of gobelins-vaseline was established. 

In 1567, born in Paris in 1567, received himself particularly after Michael Angelo, and was made court painter in the reign of Henry IV. Hardly, however, had French art begun to flourish, when it withered like a hot-house plant, owing principally to the licentiousness which prevailed at the courts of Francis II. and Charles IX. Art was profaned for licentious purposes, and lost its purity and elevation; the design became incorrect, the colouring feeble and void of harmony. In Simon Vouet (born in Paris in 1582, died in 1641) France had a distinguished national artist, who established a school, and purified the art, and was of great service to it. His manner formed itself in Venice and Rome. His style was noble and animated. He was employed to paint the gallery of distinguished persons, which had been begun by Philip of Champagne. He afterwards fell into an affected manner. Le Brun, Le Sueur, J. B. M. Moreau, and other artists, who had formed themselves in Venice and Rome, had in their youth, with his family, and his other brothers, Alicia and Claude, were his pupils. His most celebrated contemporaries were Noel Jouvent, Allemand, Perrier, Quintin, Varin, &c. The last was the master of the great Nicolas Poussin, who is called the French Raphael. He was born at Andely, in 1594, and descended from a noble but reduced family. He received his education entirely in Rome. His elevated manner, depth of meaning, and noble simplicity, were not understood at the court of Louis XIV., where no- thing pleased unless it bore the character of pomp and splendour. Poussin was a philosophical painter; he painted for the understanding rather than to the senses. His works often awaken serious reflection. He was the first painter of landscapes in the heroic style. His disciple, Gaspar Dughet, who adopted the name of Poussin, was particularly distinguished as an inventor. The artists of this period are: Le Valentin, born at Colomiers in 1600, died in 1632. He formed himself after Caravaggio, and possessed more boldness and power than his French predecessors. Jacques Blanchard, born in 1600, died in 1638, received the surname of the French Titian, and was the most perfect colourist of the age. Claude Gelles, called Claude Lorraine, born in 1600, and died in 1692, the most eminent landscape painter of any age, formed himself entirely in Italy. Chaveau was distinguished for the strength and vigour of his compositions. The two Mignards of Troyes, in Champagne, were also celebrated—the elder brother, Nicholas, called Mignard of Avignon, particularly as a portrait painter; the younger, Pierre, called Mignard le Romain, for his masterly portraits and his fresco-paintings, one of the finest of which is the cupola of the church of Val de Grace in Paris, which contains more than 300 figures. He was born in 1610, and died in 1655. He also pos- seded a rare talent of copying old masterpieces. The grace of his style and the charms of his colouring are well known: they render him one of the first artists whom France has ever produced. Seb. Bour- ton, who was one of the most celebrated of the painters of the time; he was born in 1582, and died in 1665. He formed himself without having ever left Paris. He studied the works of Raphael, with the genius of which he made himself familiar by engravings, with the greatest avidity. His style is simple, noble, quiet; his drawing is correct; his colouring is tend- er, but wants force. His principal work is the life of St. Bruno, which is one of the most perfect of his works. He had little known out of France. Charles le Brun, born in 1619, and died in 1690, is celebrated. All these artists had obtained their reputation before the acces- sion of Louis XIV., whose love for pomp and magni- fience was prejudicial to the art. Le Brun was the only painter who reached his greatest celebrity in his reign. His celebrated masterpiece, representing 

Alexander visiting the captive family of Darius, was painted under the eyes of the King, who had assigned the painter a room near his own apartments at Fontainebleau. His works are very numerous. They all exhibit genius, fire, and ease. They are characterized, however, by the genuine French style, and a tendency to the theatrical. Through his influ- ence, Colbert established the French academies of art in Rome and Paris; the latter of which served to oppose the despotsm of the academy of St. Luke in Rome. After his death, however, left his his on the right path, and neglected the study of the great Italian masters. Le Brun, being desirous of having his works multiplied, had persuaded many distinguished young artists to become engravers. The most eminent among them are Girard Audran, D. Marmet, J. M. Sebiology, and the younger Bourguignon, and his other brothers, Aubin and Claude, were his pupils. His most celebrated contemporaries were Noel Jouvent, Allemand, Perrier, Quintin, Varin, &c. The last was the master of the great Nicolas Poussin, who is called the French Raphael. He was born at Andely, in 1594, and descended from a noble but reduced family. He received his education entirely in Rome. His elevated manner, depth of meaning, and noble simplicity, were not understood at the court of Louis XIV., where no- thing pleased unless it bore the character of pomp and splendour. Poussin was a philosophical painter; he painted for the understanding rather than to the senses. His works often awaken serious reflection. He was the first painter of landscapes in the heroic style. His disciple, Gaspar Dughet, who adopted the name of Poussin, was particularly distinguished as an inventor. The artists of this period are: Le Valentin, born at Colomiers in 1600, died in 1632. He formed himself after Caravaggio, and possessed more boldness and power than his French predecessors. Jacques Blanchard, born in 1600, died in 1638, received the surname of the French Titian, and was the most perfect colourist of the age. Claude Gelles, called Claude Lorraine, born in 1600, and died in 1692, the most eminent landscape painter of any age, formed himself entirely in Italy. Chaveau was distinguished for the strength and vigour of his compositions. The two Mignards of Troyes, in Champagne, were also celebrated—the elder brother, Nicholas, called Mignard of Avignon, particularly as a portrait painter; the younger, Pierre, called Mignard le Romain, for his masterly portraits and his fresco-paintings, one of the finest of which is the cupola of the church of Val de Grace in Paris, which contains more than 300 figures. He was born in 1610, and died in 1655. He also pos- seded a rare talent of copying old masterpieces. The grace of his style and the charms of his colouring are well known: they render him one of the first artists whom France has ever produced. Seb. Bour- ton, who was one of the most celebrated of the painters of the time; he was born in 1582, and died in 1665. He formed himself without having ever left Paris. He studied the works of Raphael, with the genius of
from domestic life, exhibit the most characteristic traits of the French manner of thinking and feeling. His second rank is one and lost its style, but are not entirely free from alleviation. He was the inventor of that popular species of works, called tales de genre. Vien, born in 1715, at Montpellier, became the first reformer of taste, and the father and Nestor of the modern school. His paintings are distinguished by a noble simplicity, correct design and faithful imitation of nature earnestly. The celebrated David (q. v.), the founder of the present French school, was his disciple. This artist was the first who introduced the rigid study of antiques and of nature, and thus gave rise to a purer style and a more correct drawing than had ever before existed in France. His influence in refining the taste of his nation, his zeal and unremitting industry, his affection for, and paternal interest in, his disciples, are unparalleled in the whole history of art. Vincent, Regnauld, and Ménageot, are distinguished contemporary artists. The revolution broke out, and, in 1794, all institutions of art were abolished by the national assembly. The most precious works of art were destroyed by the fury of the populace; but the artists were inspired with a new spirit. A society was formed under the name of the national republican society of artists, to the meetings of which, in the Louvre, every citizen had free access. The principal exponents in this society were those who engaged their pencils; and, if the expression was harsh and exaggerated, the insipid manner of the former period entirely disappeared. In the reign of Napoleon, every thing conspired powerfully to promote the arts, and a great number of distinguished artists appeared. The three most celebrated schools of painting were those of David, Regnauld, and Vincent. Among the disciples of David was Drouais, who died early, at Rome, in 1788. His love of all that was sublime, and good, and noble, his tenderness, and his high standard of excellence, would probably have made him the greatest of French artists. Gérard, who gained celebrity by his great historical painting, representing the entrance of Henry IV. into Paris, stands at the head of David's living disciples. Gros, Ingres, Peytavin, Hennéquin, Bertolon, Serangeli, Mad. Lalive-Leroux, Mad. Angélique, Mongez, Mad. Barbier-Valbonne, Van Ham, and Laville-Leroux, are distinguished of his pupils. Richard executes romantic scenes from the history of the middle ages with great delicacy, uniting the charms of a fine distribution of light and those of aerial and linear perspective. Regnauld stands at the head of a second school. His own works are correct and pleasing, although they remind us of the old style. His most distinguished pupil is Guérin, an artist of the first rank. Of his other pupils, Landon (editor of the Annales du Musée), Menjaud, Blondel, Moreau, and especially the portrait painter Robert le Frère, deserve mention. Regnauld has educated many eminent artists; and a fair proportion of his leading pupils are very distinguished, as, Mad. Auzon, Lenoir, Romany, Mlle. Lorimier, Bénot, Davi-Mirvaux, &c. Among the older artists in Paris, Vincent, La Grénote, Taillasson, Peyron, Monsiau, Le Thiers and Frudhon (who has taken Correggio for his model), deserve honorable mention. Girodet (died in 1824) is considered as one of the principal innovators of the day. Augustin, miniature painters; Drolling, painter of conversation-pieces; Redouté, an excellent painter of flowers; Valenciennes, the landscape painter; Mad. Claudet (the wife of an able statuary), a successful designer; Mad. Kugler, a painter in enamel, and Desoutter, an engraver, are ornaments of the modern school. A great impulse was given to the talents of the French painters by the collection of works of art, the spoils of conquered Europe, the generous grants of the Museum of Paris, under the superintendence of the ministers and talents of Denon. But few of the great number of modern French artists are inspired with the calm, sacred spirit of art; they are often too theatrical, possessing more sentimentality than depth of feeling. The mechanical part of the art, however, they execute in a masterly manner with ease, and those who are particularly distinguished for their excellence of design.

French Academy. A society of learned men and poets, having been formed in Paris, in 1659, cardinal Richelieu declared himself their protector, and a royal patent constituted them, in 1635, the Académie Française, and fixed the number of members at forty. Richelieu hated Corneille, and, therefore, one of the first literary decrees issued by this academy was to pronounce the Cid a miserable tragedy. After the death of Richelieu, the chancellor Ségur took the academy under his patronage. Louis XIV. next declared himself their protector, and granted them a room in the Louvre, where they thenceforth held their meetings. (For an account of the divisions and doings of this body, see Academy.) In 1795, it was converted into the Institut de France, which was charged with the collecting of discoveries and the advancement of the arts. In 1804, Napoleon divided the national institute into four classes: the first, consisting of sixty-three members, for the physical and mathematical sciences; the second of forty, for the French language and literature; the third of forty members, eight foreign associates and six correspondent members, for ancient literature and history. The fourth class, for the fine arts, had twenty members, eight foreign associates, and thirty-six correspondents. In 1815, the name of Institute was retained; but the four classes received their former names:—Académie des Sciences, Académie Française, Académie des Inscriptions et Belles-Lettres, Académie de Peinture et Sculpture. The well known Biographie des Quarante de l'Académie Française, Paris, 1826, is more caustic than witty.

French Sculpture. See Sculpture.

Church. The Catholic church of France was always distinguished by its independence of the papal chair. The first founding of the papal privileges was laid by the pragmatic sanction, concluded 1438. The points established in this convention between the pope and the king, were confirmed and extended by the quatuor propositiones elteri Gallician of 1682. A dispute having arisen between Louis XIV. and Innocent X., on the right (la regale), previously exercised by the Kings, of filling the lower ecclesiastical places during the vacancy of a bishopric, the King assembled the French clergy at Paris, in 1681, who drew up the four propositions above mentioned. They declare that power and authority are given by God to the vicar of Christ in spiritual, but not in temporal things; that this power is limited and restrained by the law of the church and general councils, and that the sentence of the pope is not incapable of change (irreformable), unless it is sanctioned by the voice of the church. Napoleon more than once appealed to this doctrine in his contests with the papal chair. In doctrines and ceremonies, the Gallican church does not differ from the Roman church in general. Previous to the revolution, it was adorned by learned scholars and celebrated preachers—Bossuet, Bourdaloue, Massillon, Fénelon, and Flechier. The revolution overthrew the church, stripped the clergy of its estates, and abolished the seminaries; a few names are the first consult of the French republic, restored the church by a concordat.
FRANCE. (DECIMAL SYSTEM.)

301 miles, three furlongs and 15 poles. The French league, however, in different parts of France, has been applied to different distances. The marine league (60 to a degree) equals 2833 toises, or 6081 English yards; and the astronomical league (25 to a degree) equals 2283 French toises, or 1865 English yards. The arpent, or acre of land, contained, in general, 100 square perches; but the perch varied in different provinces. The old French weight for gold and silver, called poids de mare, makes the pound or livre contain two mares, 16 ecus, 128 gros, 384 deniers, or 9216 grains. The French mares=3780 grains troy weight. For commercial purposes, the pound or livre, as likewise used, made the quintal of 100 livres = 108 lbs. avoirdupois, very nearly. Weights and measures, however, varied considerably in the different provinces. Corn measure was the muid of 12 setiers, 24 mines, 48 minutes, or 144 bushels. Wine measure was the muid of 36 setiers, 144 quartes, or 288 plats. This system extends also to coins. Some of the measures, however, have particular denominations. Among the measures of length, for instance, the millimètre is also called trait (line); the centimètre, doigt (finger); the décimètre, palme (palm); the décimètre, perche (rod). Among the square measures, the hectare is called arpent (acre). Among the measures of capacity, the hectolitre, setier (12 bushels); the kilolitre, muid (barrel). In regard to money, the franc constitutes the unit. It weighs 5 grammes (4) of silver, with an alloy of 1/3 of copper, and is divided into décimes and centimes, 10th and 100th parts. The decimal system was also applied to the calendar. Each of the twelve months was composed of 30 days, and divided into three weeks (decades), each consisting of 10 days. At the end of the year, five, or, in a leap year, six intercalary days were added. The day was also divided into 10 hours, the hours into 100 minutes, and so on. Applied to the circle, the decimal division started from the quadrant, which was divided into 100 degrees (instead of 90), and these into 100 minutes, &c.

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301. Concluded with pope Pius VII. Institutions for the education of the clergy have since been established. But the church has never recovered her ancient celebrity for learning and eloquence, although her theological literature has been enriched by such men as Grégoire and the cardinal Maury, one of the most distinguished preachers of the age, and the author of a valuable work on pulpit eloquence. After the return of the Bourbons, in conformity with the papal bull of October 10, 1821, the number of dioceses and the pay of the inferior clergy was increased. In the mean time, the efforts of a powerful party, which aimed at the destruction of the freedom of the Gallican church, and the re-establishment of the old missions, were successfully resisted. The president and professors of the episcopal seminaries were required, in 1824, to subscribe to the declaration of the Gallican church of 1682, and a missive episcopal against it by the archbishop of Toulouse, count Clermont Tourniers, in the ultramontane spirit, was disapproved by the government. Many bishops, in 1826, solemnly declared their adherence to the decrees of 1682. The connexion between church and state was dissolved in 1830.

**French Decimal System.** The decimal system of weights and measures (roc秘诀) was introduced into France during the revolution. All measures and weights are reduced to one basis—the linear measure. This basis, called a mètre, is the ten-millionth part of a quarter of a meridian—3 feet, 0 inches, 11 lines Paris measure, or 3 feet, 5 inches, 2 millés. This unit, increased or diminished in the decimal ratio, gives the other measures, which are designated by the name of the basis, with the Greek or Latin numerals prefixed. The Latin numerals express division; the Greek, multiplication. The former are—decem, 10; centum, 100; milli, or mille, 1000; the latter—dec, 10; hecto, 100; chilion, 1000; myria, 10,000. The following forms, therefore, are used (the word mètre being always understood): 1. For the division: deci, centi, milli, &c. 2. For the multiplication: deci, 10 times; hечно, 100 times, &c.

The table will render the reduction of these weights and measures into the English, easy:

<table>
<thead>
<tr>
<th>French Measure</th>
<th>English Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mètre</td>
<td>39.37 inches, or 3.28 feet</td>
</tr>
<tr>
<td>Are</td>
<td>100 mètres carrés</td>
</tr>
<tr>
<td>Centimètre</td>
<td>0.3937 inches</td>
</tr>
<tr>
<td>Gramme</td>
<td>0.0353 pounds, or 1 dram</td>
</tr>
</tbody>
</table>

The old weights and measures of France were as follows:—Long measure. The toise or fathom of France is equal to 6 feet French, the foot to 12 inches French, and the inch to 12 lines, each subdivided into 12 points. 76 French feet are nearly equal to 81 English feet; or, more accurately, 40,000 French feet, inches, or lines, equal 42,838 English feet, inches, or lines. Thus one French foot = 0.3937 English foot; or, 1 French inch = 0.3937 English inches; and hence one English foot equals 1.26 French inches. The Paris aune was 46; English inches. In the old French road measure, the lieue, or league, is two French miles, each mile 1004 toises; hence the French league equals two English miles, three furlongs and 15 poles. The French league, however, in different parts of France, has been applied to different distances. The marine league (80 to a degree) equals 2833 toises, or 6081 English yards; and the astronomical league (25 to a degree) equals 2283 French toises, or 1865 English yards. The arpent, or acre of land, contained, in general, 100 square perches; but the perch varied in different provinces. The old French weight for gold and silver, called poids de mare, makes the pound or livre contain two mares, 16 ecus, 128 gros, 384 deniers, or 9216 grains. The French mares=3780 grains troy weight. For commercial purposes, the pound or livre, as likewise used, made the quintal of 100 livres = 108 lbs. avoirdupois, very nearly. Weights and measures, however, varied considerably in the different provinces. Corn measure was the muid of 12 setiers, 24 mines, 48 minutes, or 144 bushels. Wine measure was the muid of 36 setiers, 144 quartes, or 288 plats. This system extends also to coins. Some of the measures, however, have particular denominations. Among the measures of length, for instance, the millimètre is also called trait (line); the centimètre, doigt (finger); the décimètre, palme (palm); the décimètre, perche (rod). Among the square measures, the hectare is called arpent (acre). Among the measures of capacity, the hectolitre, setier (12 bushels); the kilolitre, muid (barrel). In regard to money, the franc constitutes the unit. It weighs 5 grammes (4) of silver, with an alloy of 1/3 of copper, and is divided into décimes and centimes, 10th and 100th parts. The decimal system was also applied to the calendar. Each of the twelve months was composed of 30 days, and divided into three weeks (decades), each consisting of 10 days. At the end of the year, five, or, in a leap year, six intercalary days were added. The day was also divided into 10 hours, the hours into 100 minutes, and so on. Applied to the circle, the decimal division started from the quadrant, which was divided into 100 degrees (instead of 90), and these into 100 minutes, &c.
FRANCE, ISLE OF;—FRANCIS OF PAULA.

FRANCE, ISLE OF; an ancient province of France, so called because it was originally bounded by the Seine, Marne, Ourcq, Aisne, and Oise, and formed almost an island. It was finally extended much farther, and was bounded N. by Picardy, W. by Normandy, S. by Orleans and Nivernais, and E. by Champagne. See Departments.

FRANCIS, or MAURTIUS; an island in the Indian sea, belonging to Great Britain. It is situated about 600 miles E. of the island of Madagascar; between 19° 58' and 20° 31' lat. S., and 57° 16' and 57°46' lon. E. It is of circular form, about 150 miles in circuit, and composed chiefly of rugged and pointed mountains, containing caves of granite. Many of the mountains are said to be so high as to be covered with snow throughout the year. The climate is warm, but, notwithstanding, very wholesome; the air serene, and very much exposed to hurricanes. The soil is generally red and stony, though mountainous towards the sea-coast; but within land there are many spots both flat and fertile. The whole island is well watered. It produces all the trees, fruits, and herbs which grow in this part of the globe, and in great plenty; and is famous for its ebony, esteemed the most solid, close, and shining of any in the world. Groves of oranges, both sweet and sour, are common, as well as citrons; and the island yields great wax of great perfection. The island produces little grain, or any other useful vegetable, except the potatoe, but depends for provisions almost entirely on Bourbon, which is considered its granary. Bourbon having no port, its trade is carried on entirely by the channel of Mauritius. The exports consist in excellent rice, a great part of it raised in Bourbon, cotton, indigo, sugar, and cloves. There are two ports, Port Louis, or North-west Port, the capital, and Port Bourbon. In 1822, there were 87,603 inhabitants, of whom 10,339 were white, 13,475 free blacks, and 63,769 slaves. The inhabitants, most of whom are descendants of noble French families, are remarkable for their polished manners. Education is much attended to. The Lascuanian method of teaching is much in use. The accounts of the government are kept in plaintiffs of 100 cents, and those of the merchants in plaintiffs of 10 livres, or 200 sous. Since 1820, the medium of exchange has been a paper note issued in Bourbon, of 1, 2, 5, 10, and 50 Spanish dollars. The island was discovered in the sixteenth century, by don Pedro Mascarenhas, a Portuguese, and called Ilha do Cervo. Van Neck, a Dutchman, having found it uninhabited in 1598 called it Mauritius, after the Prince of Orange. In 1721, the French took possession of it, after it had been abandoned by the Dutch. In 1810, it was taken by the British, and confirmed to them by the peace of 1814.

FRANCHE-COMTE, or UPPER BURGUNDY; an ancient province of France, forming, at present, the departments of the Doubs, of the Upper Saone, and of the Jura. It was the ancient Sequania, and formed part of that Roman province, the capital of which was Besançon. In the division of the states of the emperor Maximilian, it fell to Spain; but Louis XIV, conquered it in 1674, and it was ceded to France by the peace of Nimogue, in 1678.

FRANCIS OF ASSISI, St., was born at Assisi, in Umbria, 1181, and received the baptismal name of John. He was afterwards called Fra Luca, on account of his faculty of speaking French, which was necessary to the Italians, in commercial affairs, for which he was destined by his father. He was born, says Builet, with the sign of a cross upon his shoulder, and in a stable, in which latter circumstance he resembled the Saviour. Without indulging in such practices as were grossly vicious, Francis, whose character was naturally yielding, sociable, and generous, did not refrain from the pleasures of the world; but in the midst of this mode of life, he beheld, in a dream, a quantity of arms, marked with the sign of the cross. He asked for whom they were destined, and was answered, "for himself and his soldiers." He then served as a soldier, but was informed, in another dream, that his soldiers must be spiritual. He therefore sold the little property which he possessed, left the paternal roof, assumed the monastic habit, and girded himself with a cord. He soon had a great number of followers, and, in 1226, the order was confirmed by pope Innocent III. The new order was called friars or mendicants, a church in the vicinity of Assisi, which was the cradle of the order of the Franciscans or Minori tes. Francis afterwards obtained a bull in confirmation of his order, from pope Honorius III. Some of his disciples being anxious to have the privilege of preaching in all places, without the permission of the bishops, he answered, "Let us win the great by our humility and respect, and inferiorities by our preaching and example; but let our peculiar distinction be to have no privileges." He then went on a pilgrimage to Palestine; and, in order to convert the sultan Meledin, offered to prove the truth of Christianity by throwing down a trowel in the presence of the Sultan, ever, declined this test, and dismissed him with marks of respect. After his return, he added to the two classes of his order, the Minorites and the Claristes, a third, designed to embrace penitents of both sexes. He then withdrew to a mountain in the Apennines. There, if we may believe the legend, he bedeked, in a vision, a crucified savior, who performed his feet, hands, and right side. On this account, the order received the name of seraphic. Francis died two years after, at Assisi, October 4, 1226. He was double a man of great talents, who was actuated by the noble idea of teaching Christianity to the poor and neglected of his time. See Franciscaus.

FRANCIS OF PAULA, founder of the order of the Minims, was born, in 1416, in the city of Paula, in Calabria. According to some accounts, he was descended from a noble family in impoverished circumstances; but, according to others, he was of less illustrious origin. His father destined him for the law. He was a monk in the monastery at Trapani, but renouncing his paternal inheritance, he withdrew to a cave in a rock, slept on the bare ground, and satisfied his hunger with the coarsest food. He had scarcely reached his twentieth year, when so great a number of persons came to dwell in the solitude around him, that he obtained, from the archbishop of Conza, permission to build a convent and a church. Assisted by the inhabitants of the vicinity, the buildings were soon finished, and, in 1436, ready to receive a numerous society. This was founded the new order, which was, at first, called the hermits of St Francis, and was confirmed, in 1474, by pope Sixtus V. In 1499, the statutes of the order were again confirmed by Alexander VI., under the name of the Minims (Latin, minimum, the least). The basis of the order was humility, and its motto charity. To the three usual vows, Francis added a fourth, that of keeping lent during the whole year; that is, abstaining not only from meat, but from eggs and every kind of food prescribed by bishops by the rule of St. John of God. He was afterwards called Francais, on account of his facility of speaking French, which was necessary to the Italians, in commercial affairs, for which he was destined by his father. He was born, says Builet, with the sign of a cross upon his shoulder, and in a stable, in which latter circumstance he resembled the Saviour. Without indulging
where he was received with the highest honours. The monarch threw himself at his feet, supplicating him to prolong his life. Francis answered him with dignity, and refused his presents. If he was unable to prolong the life of the king, he at least aided him in dying with resignation. Charles VIII. and Louis XII. detained him, with his religious, in France. Charles consulted him on all affairs of importance, built him a monastery, and Francis did not forget him when he returned to Tours, and one at Amboise, and loaded him with honours and tokens of veneration. Other princes, also, gave the Mimiins proofs of their favour. The king of Spain wished to have the order introduced into his dominions, where they were called the lords of victory, or the company of the deliverance of Malaga from the Moors, which had been predicted by Francis. In Paris, they were called bons-hommes. Francis, notwithstanding his rigorous mode of life, attained to a great age. He died at Plessis-les-Tours, April 2, 1507, at the age of ninety-two. Twelve years after his death, he was canonised; and the Catholic church celebrates his festival April 2. See Memina. FRANCIS I., king of France, called by his subjects, the father of literature, was born at Cognac, in 1494. His father was Charles of Orleans, count of Angoulême, and his mother, Louisa of Savoy. He arrived at the age of twenty-one, on the death of his father-in-law Louis XII. Francis determined to support his claims to Milan, and to take possession of the duchy. The Swiss, who had established the duchy of Maximilian Sforza in Milan, held all the principal passes; but Francis entered Italy over the Alps, by other ways. September 13, 1515, after two days' fighting, he gained a victory over the Swiss, who had attacked him in the plains of Marignano. This was the first battle which the Swiss had lost. They left 10,000 men dead on the field. In this engagement the king gave striking proofs of his valour and presence of mind. The old marshal 'Trivulzio, who had fought eighteen battles, declared they were all child's play compared with this combat de géants. Maximilian Sforza now concluded a peace with Francis, surrendered Milan, and retired into France, where he passed the rest of his days in tranquil retirement. The news of his death, which was killed in battle by his own forces, at the battle of Muñilla, so much excited Francis as to set out in the same field, met him at Bologna, made peace with him, and granted the well-known concordate. A year after the conquest of Milan (1516), Charles I. of Spain, afterwards the emperor Charles V., and Francis, signed the treaty of Noyon, a principal article of which was the restoration of Navarre. This peace, however, lasted but a few years. On the death of Maximilian (1519), Francis was one of the competitors for the empire; but, in spite of the enormous sums he expended to obtain the suffrages of the electors, the choice fell on Charles. From this period, Francis became his rival, and was almost continually at war with him; first on account of Navarre, which he won and lost almost in the same moment. He was more fortunate in Picardy, whence he drove out Charles, who had entered it, invaded Flanders, and took Landrecy, Bouconin and several other places. On the other hand, he lost Milan, with its territory; and, what was still more sensibly felt by him, the constable of Bourbon, forced, by the intrigues of the queen-mother, to leave France, went over to Charles. This great commander defeated the French in Italy, drove them out of Provence, took Tournai, and laid siege to Mar- seilles. Francis flew to the defence of Provence, and, after delivering it, advanced into the Milanese, and laid siege to Pavia (1524). But, while carrying on this siege in the midst of winter, he was impru-
the union of the Protestant princes of Germany again, and conducted his son following up his success, and inclined him to a peace, which was concluded at Crespi, in 1544. Charles resigned all his claims on Burgundy. Two years after, peace was made with England. Shortly after (March, 1547), Francis died of that disease which had been introduced into Europe by the discovery of America, and which had prevailed luckily by his wife, and, according to the order, Francis I. possessed a chivalric and enterprising spirit. His generosity, clemency, and love of letters might have rendered France happy, had he been content to reign in peace. His protection of letters and the arts has caused many of his defects to be overlooked; he possessed an undying sway. He lived at the period of the revival of learning, and transplanted into France the remains which had survived the fall of the Greek empire. The arts and sciences first began to exercise a salutary influence on the character and manners of the French during his reign. In 1544, he sent Jacques Cartier on a voyage of discovery from St. Malo to America, the result of which was the discovery of Canada. Francis established the royal college, and laid the foundation of the library of Paris. Notwithstanding his many wars, and other great expenses, he left a flourishing treasury without debts.

FRANCIS II., the King of France, son of Henry II. and Catherine de Medicis, born at Paris, January 1, 1544, ascended the throne, on the death of his father, July 10, 1559. The year previous, he had married Mary Stuart, only child of James V., King of Scotland. During his short reign of seventeen months, were sown the seeds of those evils which afterwards desolated France. The uncle of his wife, Francis duke of Guise and the cardinal of Lorraine, held the reins of government. The latter stood at the head of the clergy, and had charge of the finances. The former had the direction of military affairs; and both used their power solely as a means of gratifying their pride and avarice. Antony of Bourbon, king of Navarre, and his brother Louis, prince of Condé, provoked that two strangers should govern the kingdom, while the princes of the blood were removed from the administration, united with the Calvinists to overthrow the power of the Guises, who were aliens of the Catholic church. Ambition was the cause of the quarrel, religion the pretext, and the conspiracy of Amboise the first symptom of the civil war. The war broke out in March, 1560. The prince of Condé was the secret soul, and La Renau- dede the ostensible leader. The prince of Condé, as the head of the Calvinists, was already condemned to die by the bands of the executioner, when Francis II., who was of a feeble constitution, and had long been out of health, died, December 5, 1560, at the age of eighteen years, leaving the kingdom loaded with debt, and a prey to all the miseries of civil war.

FRANCIS I., STEVEN, eldest son of Leopold duke of Lorraine, emperor of Germany, was born in 1708. In 1723 he went to Vienna, and was invested with the Silesian duchy of Teschen. On the death of his father, in 1729, he succeeded to the dukies of Lorraine and Bar, of which, however, he did not long retain possession. In 1733, Stanislaus Leszczynski was chosen king of Poland, on the death of Frederic Augustus of Saxony; but, being expelled from that kingdom, his son-in-law, Louis XV., demanded from the emperor who had been his principal antagonist, an indemnification for him. As France had long laid claims to Lorraine, and repeatedly rendered herself mistress of it, it was stipulated, in the preliminary articles of Vienna, 1738, that the duke of Lorraine should cede that country to king Stanislaus, and, on his death, to France for ever; and that, in return, he should succeed to the grand duchy of Tuscany, on the death of the grand duke, John Gasto, the last of the Medici. This took place in 1737. In 1736, Francis had married Maria Theresa, daughter of the emperor Charles VI. He was appointed general field-marshall and generalissimo of the imperial armies, and, in 1738, with his brother Charles commanded the Austrian armies, in Hungary, against the Turks. After the death of Charles VI. (1740), he was left in possession of the hereditary states of Austria, but without being permitted to take any part in the administration. After the death of Charles VII., he was elected emperor in 1745, notwithstanding some opposition, and crowned at Frankfort, October 4. He died at In- prague, August 17, 1765. For a review of the events of his twenty years' reign, see Therese, Maria.

FRANCIS, J. Philip, one of the many political writers to whom the authorship of Junius has been ascribed, was the son of the translator of Homer, and born in Ireland, in 1740. He was educated partly under his father, and afterwards at St. Paul's school; on leaving which he became a clerk in the secretary of state's office. In 1760, he went out to Portugal with the British envoy; and, on his return, he obtained the situation of clerk in the war-office, under lord Barrington. He was dismissed, or relinquished the post, in consequence of a quarrel with the minister's clerk. He then went to the East Indies, where he became a member of the council of Bengal. He now distinguished himself by his opposition to the measures of governor Hastings, in which he seems to have been influenced by personal animosity, the violence of which at length occasioned a duel, in which Mr Hastings was wounded. In 1781, Mr Francis returned to England, and, shortly after, was chosen member of parliament for the borough of Yarmouth, in the Isle of Wight. In the house of commons, he joined the ranks of opposition; and, on the impeachment of Mr Hastings, though his name did not appear as a manager of the proceedings against that gentleman, yet he actively supported them on every occasion. He came into office with the Whig administration. He died in 1818. He published several political pamphlets, and the authorship of the famous Letter of Junius has been ascribed to him on this occasion. See 'The Identity of Junius with a distinguished living character established,' London, 1816. 8vo. A review of this work appeared in No. 57 of the Edinburgh Review, in which very strong evidence is adduced in support of the hypothesis of Sir Philip Francis being the author of Junius. The evidence consists chiefly in the coincidence of dates with Sir Philip's residence in England and the publication of the letters of Junius—in his connexion with the war-office with which Junius evinces a peculiar acquaintance—in the personal friendships of Sir Philip—in the peculiarities of phrases common to both—in the resemblance of the hand-write—and in the cessation of the letters of Junius immediately on Sir Philip being appointed to a seat in the supreme council in India. Sir Philip, we believe, disavowed the authorship, but upon no one has it yet been more satisfactorily fixed.

FRANCIS I., JOSEPH CHARLES (formerly, when emperor of Germany, called Francis II.), emperor of Austria, king of Hungary, Bohemia, Galicia, Lodomiria, of Lombardy, and Venice, &c., archduke of Austria, &c., was born February 12, 1768. He was the son of the emperor Leopold II. and Maria Louisa, daughter of Charles III., king of Spain. He succeeded his father in the hereditary states of Austria, March 1, 1792, and was crowned king of Hungary, June 6, 1792, emperor, July 14, 1792, and king of Bohemia, August 5 of the same year. France having been declared an empire (May 18, 1804), he as-
FRANCIS I.—FRANCISCANS.

Surnamed (deed of August 11, and proclamation of December 7, 1804) the title of hereditary emperor of Austria; and, on the establishment of the confederacy of the Rhine (July 1806), he abdicated the crown of Roman emperor and German king, and resigned the government of the German empire.

Francis I. was a man of very little intellectual strength, but a friend to justice. In the following sketch of the principal features of his reign, but little must be attributed to him personally, as is generally the case with monarchs. He was educated, at first, under the eyes of his father, at Florence, and afterwards of his uncle, the emperor Joseph II., at Vienna. His education was, in vain; he continued the war with energy and firmness, placed himself at the head of the army of the Netherlands. Animated by the presence of the monarch, they defeated the French (April 20) at Cateau and Landrecy, which they captured, and gained the bloody battle of Tournay (June 22). The states of Brabant, however, refused to grant him troops and money, and, apprehending the misfortunes that afterwards befell him, he left Brussels, June 13, to return to Vienna. The peace of Campo-Formio (October 17, 1797) procured him a temporary repose. In 1799, he entered into a new coalition with England and Russia against the republic; in 1801, Russia and Austria were compelled to conclude the peace of Lunéville. In 1805, war again broke out between Austria and France. But, after the battle of Austerlitz (q. v.), December 2, 1805, the terms of an armistice and basis of a treaty were settled in a personal interview between Francis I. and the emperor of France, at the end of the latter, and the peace of Presburg was signed on the 26th of the same month. In 1806 and 1807, during the war between France on the one side, and Russia and Prussia on the other, Francis I. observed the most exact neutrality, and offered (April 3, 1807) his mediations to the belligerent parties, but in vain. However, the proclamation delivered by the Pope, addressed to the people of Austria, April 8, 1809, the call on all Germany in his name, his declaration of war against France, March 27, 1809, and the establishing of a militia throughout his empire, showed plainly that Francis was never more anxious to prepare himself for war than after the peace of Tilsit, between Alexander and Napoleon.

Although the year 1809 was a period of reverses, yet his losses appeared to be the foundation of a permanent peace with the gigantic power of France. The peace of Vienna restored to the Austrian monarch his capital. By the marriage of his eldest daughter, Maria Louisa, to Napoleon, a strong tie was formed between the two imperial houses. His second wife was Maria Theresa, daughter of Ferdinand IV., king of the Two Sicilies. He had, by her, three children. One of the order of the Jesuits, but in 1810, alarmed by the Pope, and who engaged in the Italian wars, 1796, 1797, 1798, at Perugia, and in the campaign of 1803, in the latter, and the peace of Presburg was signed on the 26th of the same month. In 1806 and 1807, during the war between France on the one side, and Russia and Prussia on the other, Francis I. observed the most exact neutrality, and offered (April 3, 1807) his mediations to the belligerent parties, but in vain. However, the proclamation delivered by the Pope, addressed to the people of Austria, April 8, 1809, the call on all Germany in his name, his declaration of war against France, March 27, 1809, and the establishing of a militia throughout his empire, showed plainly that Francis was never more anxious to prepare himself for war than after the peace of Tilsit, between Alexander and Napoleon.

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Franciscans, under the name of Observantines, which, in 1317, when Leo X. effected an accommodation between the different parties, retained the superiority. Since that time, the general of the Observantines has been the minister of the whole order (the Franciscans use this term, minister, servant, by way of humility). The Cordeliers are a branch of the Franciscans in France. The Riformati in Italy, and the Recollects, formerly numerous in France (so called because they lived a strict monastic life), belong to the observant order. The strictest are the Alcantarines, who follow the reforms introduced by Peter of Alcantara, and go with their feet entirely bare. They are numerous in Spain and Portugal, but not in Italy. The branches of the Observants, under their common general, form two families—the cristo-montane, who have sixty-six provinces, now generally in a feeble state, in Italy and Upper Germany, in Hungary, Poland, Palestine, and Syria; the ultra-montane, with eighty-one provinces, in Spain, Portugal, Asia, Africa, America, and the islands. That portion of the Franciscans who wear shoes, or the conventuals, are much less numerous. Before the French Revolution they had sixty-four provinces, with a hundred convents and 15,000 monks. They are now found only here and there in the south of Germany, in Switzerland and Italy, where they have given up begging, and serve as professors in the colleges. A coarse woolen frock, with a cord round the waist, to which a rope with a knotted scourge is suspended, is the common dress of all the Franciscans. In 1528, Matthew of Bassi founded the Capuchins, a branch of the Minorites, still more strict than the Observantines. Since 1619, they have had a particular general. In the eighteenth century, they had 1,700 convents, with 25,000 members. St. Francis himself collected nuns in 1209, who were sometimes called Dominicinines, from their first church at St. Damian, in Assisi. St. Clare was their prioress; hence they were also called the nuns of St. Clare. The nuns were also divided into branches, according to the severity of their rules. The Urbanists were a branch founded by Pope Urban IV.; they revered St. Isabel, daughter of Louis VIII. of France, as their mother. Other branches are the female Capuchins and barefooted nuns, of the strictest observance; also the Anunnatis. In the eighteenth century, there were 10,000 convents of nuns. They were formerly supported by the alms collected by the monks; they now live by the revenues of their convents. St. Francis also founded, in 1221, a third order, of both sexes, for persons who did not wish to take the monastic vows, and yet desired to adopt a few of the easier observances. They are called Tertiarys, and were very numerous in the thirteenth century. From them proceeded several heretical fraternities, as the Fraticelli, Boghards, and the Picpues, as the strict Tertiarys in France were called. The whole number of Franciscans and Capuchins, in the eighteenth century, amounted to 115,000 monks, in 7,000 convents. At present, it is not, probably, one-third so great, as they have been suppressed in most countries. In Austria, they are not allowed to receive novices. The order flourishes in South America. In Jerusalem, they watch the holy sepulchre; and, in the Catholic cantons of Switzerland, they are engaged in the collection of the tithe.

FRANÇOIS DE NEUFCHATEAU, Nicholas, count, member of the French national institute, was born April 17, 1750, in Lorraine, and early displayed a poetical taste. Before he had finished his thirteenth year, he had published a collection of poems, of which Voltaire expressed a favourable opinion. He was elected a member of several provincial academies in France, and was expected to become a star of the first magnitude in French poetry. This expectation, however, was not fulfilled; but François distinguished himself, during the revolution, as a patriot, an able statesman, and a good citizen. In 1782, he was appointed attorney-general of the supreme council; in that capacity he translated Orlando Furioso into French verse; but the manuscript was lost in a shipwreck which he suffered on his return. During the revolution, he distinguished himself as a friend of liberty, and, in 1792, was elected a deputy to the second national assembly. His play Pamelia, performed in 1793, having given offence on account of its modernity, he was thrown into prison, from which he was delivered by the 9th of Thermidor. In 1797, he was made minister of the interior; and, after the 18th of Fructidor, he became a member of the directory, in the place of Carnot. But he was soon removed on account of his modernity, and was commissioned to obtain from count Cobenthal, at Selz, satisfaction for the insult offered to Bernadotte, the French ambassador at Vienna. June 17, 1798, he was a second time appointed minister of the interior, and introduced the expenditure of the foreign provinces, which has taken place ever since, every four or five years, and has been imitated in other countries. He was removed from this post previously to the 18th of Brumaire. Napoleon created him senator, and, in 1806, count. He ceased, however, to take any further part in public affairs, and devoted himself to his literary pursuits. He died in Paris, January 9, 1828.

FRANCONIA (in German, Franken or Frankistcher Kreis, circle of Francia); one of the ten circles into which the German empire was formerly divided, comprising one of the finest parts of Germany. The Maine flows through it from east to west. It was bounded by Saxony, the Rhineland, Saxony, Bohemia, and Bavaria. It belongs, at present, mostly to Bavaria. It formerly contained 1,500,000 inhabitants, on about 10,500 square miles.

FRANCONIAN WINES; German wines produced chiefly in the Bavarian circle of the Lower Main. The best sort is the Leistenwein, which, after it has acquired a certain age, is superior to any other German wine for its agreeable aroma. Another sort is the well-known Steinwein, inferior to the former in softness and flavour. Other good wines are the Wertheimer and Dettelbacher. As Wurzburg is at the mouth of the Main, containing 10,000 convents, the wine trade in these wines, they are often called Wurtzburg wines. The best years of recent date are 1783, 1791, 1811, 1819, and 1820.

FRANK; the name applied in the East to all Christians, probably because the French, descendants of the German Franks, particularly distinguished themselves in the crusades. The Greeks, who were accustomed to adopt the Turkish habits, also call the Europeans of the West, or, according to the expression of the people, "the men with round hats and no beards," Franks. The Lingua Franca is that jargon which is spoken in the Levant, as the common medium of communication between Europeans and the inhabitants of the East. Its chief ingredient is Italian, and it probably originated during the crusades, which brought many different people together. Madden gives a specimen of it in his travels. It resembles the Creole dialects of the West Indies.

FRANK; the German prefix meaning geographical names, meaning, sometimes free; sometimes, belonging or relating to the Franks (q. v.), a powerful German tribe, who conquered France; hence Frankreich (empire of the Franks), the German name for France.

FRANKENHALL, valley of the Franks; Frankenhausen, dwelling of the Franks; Frankenstein, stone or rock of the Franks.
FRANKE—FRANKINCENSE

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FRANKE, Augustus Hermann, founder of the orphan hospital at Halle, and of several institutions connected with it, distinguished in the history of philanthropy, was born at Lubeck, March 23, 1663. He studied so assiduously, that, in his fourteenth year, he was residing at Leipzig, under his defence. Franke then accepted an invitation to preach at Erfurt. His sermons attracted such numbers, among whom were many Catholics, that the elector of Meutz, to whose jurisdiction Erfurt then belonged, ordered him to leave the city within twenty-four hours. He then went to Halle, as professor in the new university, at first of the Oriental languages, and afterwards of theology. At the same time, he became pastor of Glauca, a suburb of Halle, where his institutions were afterwards established. The ignorance and poverty of the inhabitants of this village filled him with distress, and on his first attempt to reform them. He first instructed destitute children in his house, and gave them alms. He then took into his house some orphans, whose number soon increased. Some benevolent citizens of Halle assisted him in his charitable work. If we consider the present extent of his institutions, we shall be surprised at such a beginning. They now increased yearly. In 1698 was laid the first corner stone of the buildings which now form two rows, 800 feet long. Sums of money were sent from all quarters to the pious philanthropist, and a chemist, whom he consulted, in his death bed, left him the recipe for compounding several medicines, which forwards yielded an income of from 20,000 to 30,000 dollars. He was thus enabled to lay the foundation of so large an institution, without any assistance from government. Frequently, when he was entirely destitute of money, and apparently incapable of continuing his charities, he received unexpected supplies, in which he saw an indication of divine protection, particularly as this often happened after fervent prayers for the orphans and poor. He died June 8, 1727, at the age of sixty-four years.

The Institution, formerly called the orphan asylum of Halle, consists, 1. Of the orphan asylum, in which the greatest number at once has been 200. Since its foundation, 4500 orphans have been educated there gratuitously, of whom three-fourths were boys, and the remainder girls. Such of the boys as manifest talents are prepared to study at the university, and are supported even there. At present, the number of orphans there is only 100. 2. The royal pædagogium, an institution for the education of young gentlemen. Since its establishment, in 1696, 2790 individuals have been educated in it. They pay for the education, which is of a high standard. 3. The Latin school, established 1697, in nine to ten classes, for pupils of less wealthy condition than the former, and for boys of the city of Halle. The number of boarding scholars has sometimes been large. 4. The German schools for boys and girls, whose parents do not wish to give them the learned education. 5. The Canstein Bible Press (Canstein, instituted by Canstein, a friend of Franke, in 1712, the object of which was to furnish the Bible at a cheap rate, by stereotyping it. 2,000,000 copies of the whole Bible, and 1,000,000 of the New Testament, have been issued from the press. The profit belongs to the press, and is devoted to rendering succeeding editions still cheaper. 6. A large library and collections of natural history and philosophy. An income is obtained from the extensive apothecary's shop of the orphan asylum of Halle, and the Halleische Buchhandlung (book establishment), one of the largest in Germany. It has published all the school-classies at very low prices. The pædagogium also brings in an income, and the institution contributes to its support. Charitable contributions also continue to be received.

FRANKFORT ON THE MAINE; one of the four free cities of Germany, and the seat of the Germanic diet, is situated on the Maine, 50° 5' N. lat., 8° 36' E. long., in a charming T. The Ochsenhaus is a suburb of Frankfort, on the left bank of the Maine. Frankfort itself contains, besides 5200 foreigners, 44,000 inhabitants, mostly Lutheran. The territory of the city, as fixed by the congress of Vienna, contains ninety-five square miles, 64,000 inhabitants, 4423 houses. The government is republican, according to the constitution of May 16, 1816. It has two burgomasters, chosen annually, a legislative senate, and an executive assembly. Revenue, 760,000 guilders; public debt, 8,000,000 of guilders. Frankfort has the first seat among the free cities. It was a free city in 1145, and the rights and privileges were confirmed by the peace of Westphalia. The German emperors were crowned here in the later times of the empire. The city was founded in the time of the Carowingians. In 1806, it was given to the prince-primate, and became the capital of the grand duchy of Frankfort; but the congress of Vienna, in 1815, re-established it as a free city. Its constitution has deviated from the ancient constitutions of the imperial cities more than those of the three Hanseatic cities. The contingent of Frankfort in the army of the Germanic confederation is 473 men. There are considerable manufactures here, and the city forwards yielded an income of from 20,000 to 30,000 dollars. He was thus enabled to lay the foundation of so large an institution, without any assistance from government. Frequently, when he was entirely destitute of money, and apparently incapable of continuing his charities, he received unexpected supplies, in which he saw an indication of divine protection, particularly as this often happened after fervent prayers for the orphans and poor. He died June 8, 1727, at the age of sixty-four years.

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FRANKING LETTERS—FRANKLIN.

FRANKING LETTERS. See Post-Office.

FRANKLIN, BENJAMIN, a distinguished American
philosopher and statesman, was born in Boston,
January 17, 1706. His father, a French Huguenot
emigrant, who had emigrated to America to enjoy
religious freedom, was a tallow Chandler and soap-
boiler. Benjamin, the fifteenth of seventeen chil-
dren, was put to a common grammar school at the
age of eight years; and, from the talents he dis-
played, his father conceived the notion of educat-
ing him for the ministry. But, as he was unable
to meet the expense, he took him home, and
employed him in cutting wicks, filling moulds, and
running errands. The boy was disgusted with this
occupation, and was soon after placed with his brother,
a printer, to serve an apprenticeship to that trade.
His early passion for reading was now in some mea-
sure gratified, and he devoted his nights to perusing
such books as his limited resources enabled him to ob-
tain. Defoe's Essay on Projects, and doctor Mather's
On doing Good, were among his earliest studies. The
style of the Spectator, with which he early became
acquainted, delighted him. He gave an account of
his exertions to imitate it, in his memoirs of himself.
As he had failed entirely in arithmetic while at
school, he now borrowed a little treatise, which he
mastered without any assistance, and studied navigation.
At the age of sixteen, he read Locke on the
Understanding, the Poet Royal, and Xenophon's
Memorabilia. Happening to meet with a
work which recommended vegetable diet, he deter-
mined to abstain from flesh; and we now find the
philosophic printer and newspaper carrier purchasing
books with the little sums he was enabled to save by
the frugality of his diet. From Shaftesbury and
Coleridge he imbibed those sceptical notions which he
is known to have held during a part of his life.
His brother published a newspaper, which was the
second that had as yet appeared in America. Fran-
kie had secretly written some pieces for it, had
the satisfaction to find them well received; but, on its
coming to the knowledge of his brother, he was
severely lectured for his presumption, and treated
with great harshness. One of the political articles in
the journal having offended the general court of the
colony, the publisher was imprisoned, and forbidden
to continue it. To evade this prohibition, young
Franklin was made the nominal editor, and his inden-
turers being cancelled.

After the release of his brother, he took advantage
of this act to assert his freedom, and thus escape
from the ill treatment which he suffered. His father's
displeasure, his brother's enmity, and the odium to
which his sceptical notions subjected him, left him
no alternative but to retreat to some other city. He
therefore secretly embarked aboard a small vessel
bound to New York, without means or recommenda-
tions; and, not finding employment there, he set out
for Philadelphia, where he arrived on foot, with
his pockets stuffed with shirts and stockings, a roll of
bread under his arm, and one dollar in his purse.

Who would have dreamed (says Brissot de War-
ville) that this poor wanderer would become one of
the legislators of America, the ornament of the new
world, the pride of modern philosophy? Here he
obtained employment as a compositor, and, having
attracted the notice of Sir William Keith, the gover-
nor of Pennsylvania, was induced to go to England, for
the purpose of purchasing types, to establish himself in
business, and, although at one time guilty of some
excesses, he afterwards became a model of industry
and temperance, and even reformed his brother prin-
ters by his example. In 1726, while living in London,
he continued to devote his leisure hours to study,
and wrote a small pamphlet himself, on Liberty
and Necessity, Pleasure and Pain. After a residence
of eighteen months in London, he returned to Phila-
delphia, in his twenty-first year, in the capacity of
clerk to his brother; but he soon returned to his
trade, and in a short time formed an establish-
ment in connexion with a person who supplied the
necessary capital. They printed a newspaper, which
was managed with much ability, and acquired Fran-
klin much reputation.

It is impossible for us to trace all the steps of his
progress to distinction. His industry, frugality,
activity, intelligence; his plans for improving the
condition of the province, for introducing better sys-
tems of education; his municipal services, made
him an object of attention to the whole community.
His advice was asked by the governor and council on
all important occasions, and he was a mem-
ber of the provincial assembly. He had begun
to print his Poor Richard's Almanac in 1732; and the
aphorisms which he prefixed to that for 1757 are well
known. At the age of twenty-seven, he undertook
to learn French, Italian, and Spanish, and, after hav-
ing mastered these languages, he took up Latin.

We might continue this chronological notice of his services, and
it would show the remarkable versatility of his mind,
but our space forbids us. Being in Boston in 1746,
he saw, for the first time, some experiments in elec-
tricity, which, though imperfectly performed, were
the origin of the most brilliant discoveries which had
been made in natural philosophy; for an account of
which we must refer to the article Electricity. We

cannot avoid being struck with the immediate practi-
cal application made of his new discovery, in the
invention of the lightning-rods.

Franklin had ever shown himself a zealous advo-
cate for the rights of the colonies, and, it having been
determined to hold a general congress at Albany, to
arrange a common plan of defence, he was named a
deputy. On his route, he projected a scheme of
union, embracing the regulation of all the great
political interests of the colonies and the mother
country. The Albany plan, as it was called, after it
was adopted by the congress, proposed a general
government for the provinces, to be administered by
a president appointed by the crown, and a grand
council, consisting of the provincial assemblies; the
council was to lay taxes for all the common exig-
cencies. The plan, though unanimously sanctioned by
the congress, was rejected by the board of trade, as
savouring too much of the democratic, and by the
assemblies, as having too much of prerogative in it.
In 1753, he was appointed to the council, and, in a few years, adviced large sums of his own
money to general Braddock, the result of whose
expedition he foresaw, and in regard to which he
made some fruitless suggestions to that general.
After the defeat of Braddock, he introduced a bill for
establishing a volunteer militia.

Being chosen as a common councilor, he raised a corps of
560 men, and went through a laborious campaign.
On his return, he was chosen colonel by the officers of a regiment. Pennsylvania then was a proprietary government, and the proprietors claimed to be exempted from taxes. In consequence of the disputes to which this claim gave rise, colonel Franklin was in 1754 invested with the authority, by the provincial assembly, as the agent of the province. To aid the cause of his constituents, he published (in 1759) a considerable work entitled the Historical Review, which was completely successful. His reputation was now such, both at home and abroad, that he was in 1757 appointed agent of the province of Massachusetts, Maryland, and Georgia. Oxford and the Scotch universities, conferred on him the degree of doctor of laws, and the royal society elected him a fellow. During his residence in England, doctor Franklin formed personal connexions with the most distinguished men of the country and of the continent; his correspondence with whom displays a striking union of a cultivated mind with a native and lively imagination. In 1762, he returned to America; but, new difficulties arising between the province and the proprietaries, the assembly determined to petition for the establishment of an independent government, and Franklin was again appointed agent, in 1764.

But the American revolution was now commencing, and he appeared in England no longer as a colonial agent, but as the representative of America. He arrived in London in 1764, about thirty-nine years after his first landing in England as a destitute and deluded mechanic. The project of taxing the colonies had been already announced. He carried with him a remonstrance of the provincial assembly of Pennsylvania against it, which he presented to Mr. Grenville before the passage of the stamp-act. He opposed the measure, and, from its passage (1765) to its repeal (1766), was indefatigable in his exertions to prove the unconstitutionality and impiety of the act. When the repeal was about to be attempted, it was concerted by his friends that he should be examined on the whole question before the house of commons. This memorable examination took place February 3, 1766. The firmness, precision, readiness and epigrammatic simplicity of manner with which he replied to the interrogatories, mostly put by his friends, were so striking, that the information he communicated was so varied, comprehensive, where it ought to be so, and gave life to the questions touching finance, policy and government, that the effect was irresistible; the repeal was inevitable. On the passage of the revenue acts of 1767, he became still more bold and vehement in his expostulations, and openly predicted in England, that the inevitable result of those and the other similar measures of the ministry would be a general resistance by the colonies, and a separation from the mother country. But he never deviated from his original plan, to make every effort to enlighten the public opinion in England, to arrest the ministry in their infatuation, and to induce moderation and patience, as well as constancy and unanimity, on America. He endeavoured, at the same time, to stand well with the British government, aware that this was necessary to enable him to serve his country effectually; while he never ceased to proclaim the rights, justify the proceedings, and animate the courage of his countrymen. He was not ignorant, to use his own words, "that this course would render him suspected in England of being too much an American, and in America of being too much an Englishman." His transmission of the celebrated letters of Hutchinson and Shirley (1772), which were concealed in his hands, is not the least memorable of his acts at this opening period of the revolution. He immediately avowed his own share in the transaction, although he never divulged the names of the persons from whom he had received them. The indulgent petition of the assembly of Massachusetts, in consequence of these letters, was presented by him to the ministry, and he was immediately made secretary of the most virulent newspaper, and held up to the hatred and ridicule of the British nation. He met the conflict with no less spirit than wit, as is particularly exemplified in his two satirical pieces, the Prussian Edict and the Rules for reducing a great Empire to a small one. At the discussion of the petition before the privy council, Franklin was present. Wedderburn (afterwards lord Loughborough), the solicitor-general, assailed him with the most coarse invective, styling the venerable philosopher, and the official representative of four of the American provinces, a "thief and a murderer," who had "forfeited all the respect of society and of men." The ministry now dismissed him from his place of deputy postmaster-general, and a chancery suit was instituted in relation to the letters, for the purpose of preventing him from attempting his own vindication. Attempts were made, as the difficulties increased, to corrupt the man whom it had been the object of the ministry to destroy. "Many reward, unlimited recompense, honours, and recompense beyond his expectations," were promised him; but he was as inaccessible to corruption as to threats. It was at this period that he presented the petition of the first American congress; and he attended, behind the bar (Feb. 1, 1775), in the house of lords, when Chatham proposed his plan of a reconciliation. In the course of the debate, that great man characterized him as "one whom all Europe held in high estimation for his knowledge and wisdom; who was an honour, not to the English nation only, but to human nature generally."

Having received an intimation, that the ministers were preparing to arrest him as guilty of fomenting a rebellion in the colonies, he embarked for America, and was immediately elected member of the congress. As a member of the committee of safety and of that of foreign correspondence, he performed the most fatiguing services, and exerted all his influence in favour of the declaration of independence. In 1776, he was sent to France as commissioner plenipotentiary, to obtain supplies from that court. He was not, at first, publicly received in his official capacity, but he succeeded in persuading M. Cambacérès, de Vergennes; and, soon after the reception of the news of the surrender of Burgoyne, he had the happiness of concluding the first treaty of the new states with a foreign power, Feb. 6, 1778. For the particulars of this mission, we must refer to his correspondence. He endeavoured to establish the credit of America throughout Europe, by his essay entitled Comparison of Great Britain and America as to Credit, in 1777. No sooner were the capture of Burgoyne and the treaty with France known in England, than the ministry began to talk of a reconciliation. Emisaries were employed to sound Franklin as to the terms on which this reconciliation of the colonies could be effected; but he rejected every idea of treating except on the basis of independence. "The Americans (he said) were neither to be dragged nor bannockd out of their liberty." The next act of the British ministry was to endeavour to separate America from France, and to excite a jealousy between the two countries; but all these vilest were defeated by the firmness and prudence of the American ministers.

After the conclusion of the treaty with France, Franklin left France, appointed minister plenipotentiary to that court (1778), and was subsequently named one of the commissioners for negotiating the peace with the mother country. At the close of the nego-
tations (November, 1782), he requested to be recalled, after fifty years spent in the service of his country, but could not obtain permission to return till 1785. During this interval, he negotiated two treaties, one with the Huns and another with the Russians. The general enthusiasm with which he was received in France is well known. His venerable age, his simplicity of manners, his scientific reputation, the ease, gaiety, and richness of his conversation—all contributed to render him an object of admiration to countries, far more elegant, and of more ancient tradition, than those of the Huns and the Russians. He regularly attended the meetings of the academy of sciences, and was appointed one of the committee which exposed Mesmer's imposture of animal magnetism.

At a meeting of the academy, he met Voltaire, then in Paris, on his triumphal visit. The patriarch of letters and the patriarch of liberty met before a crowded hall, and embraced. On his return to his native country, before he was permitted to retire to the bosom of his family, he filled the office of president of Pennsylvania, and served as a delegate in the federal convention, in 1787, and approved the constitution of the Union. He died April 17, 1790, with his faculties and affections unimpaired. A complete edition of his works was published in London, 1806, in 3 vols. 8vo. His memoirs, with his posthumous writings, were published by his grandson, W. T. Franklin, in 1819, 3 vols. 4to; later edition, 8vo.

FRANKLIN; a post town of Missouri, capital of Howard county, on the north bank of the Missouri, 200 miles above St Louis. This town was laid out in 1816, and, in 1821, contained about 500 buildings. It has a healthy situation, in a district very fertile and rapidly settling.

FRANKLINITE. This mineral is found crystallized in the form of the regular octahedron (its primitive form), though more generally its crystals are highly modified by various replacements, so as to become nearly globular in their shape. Its common mode of occurrence is in granular masses. It is black, brittle, and slightly magnetic. Specific gravity, 4.87. It consists of iron, 60; oxide of zinc, 17; and oxide of manganese, 16. It occurs very abundantly in New Jersey, accompanying the red oxide of zinc, and is often imbedded in limestone, associated with garnet, spinelle, &c.

FRANKS; a German tribe, which became known in 238 A. D., when they lived between the Weser and the Lower Rhine. As early as in the fourth century, they are mentioned, and, in the beginning of the fifth century, they first entered Belgic Gaul. (See FRANCE.) The extensive district which the Franks, at a later period, wrested from the Alamanni, on the Rhine, constituted the Francia Bithynia. The country, since called Francoonia (Frankenland), did not then belong to the Franks, but formed part of Thuringia, from which it was probably separated in the time of Charlemagne. In the ninth century, we find a duchy of Francoonia in German history, which, at a later period, belonged to the Hohenstaufen family.

FRANZENSBRUNN; the name of some mineral springs near Eger, in Bohemia, rising from a turf moor. As early as 1584, they seem to have been visited, and to have enjoyed much reputation in the seventeenth century, after which they sunk in repute.

FRASCATI; one of the most charming spots of Italy is the site of the ancient Tusculum, eleven miles S. E. from Rome. Tusculum, according to tradition, was built by Telogmus, son of Ulysses. Cato the censor was born here. Frascati is much resorted to by the Romans, in the summer season—*tempo di villeggiatura,* as the Italians call it. Situated on the declivity of a hill, it affords the most enchanting views of the Campagna di Roma, of the *Alma città* herself, and of the sea in the distance. Among the villas, the Villa Aldobrandini, called also Belvedere, from its beautiful views, is remarkable; it now belongs to the Duke of Zamoyski. The ruins, bass-reliefs, fresco paintings of Domenichino, are to be found in this villa. Frascati is the see of a bishop, and contains a seminary, endowed by the late cardinal York, once bishop of the place. Population, 4200. In the environs, and on the summit of the hill, the ruins of the Roman fort are still visible, near which are the ruins of Cicero's villa, the site of a small amphitheatre, baths, &c.

FRASERA CAROLINIENSIS, or AMERICAN COLONMO, inhabits the basin of the Ohio and Mississippi, extending as far westward as the sources of the Arkansas, and is also found among the Alleghany mountains. It is allied to the gentian, and possesses similar sensible properties. The stem is herbaceous, erect, from three to six feet high; the leaves oval, oblong, opposite, and verticillate; the flowers greenish yellow; the corolla is much larger than the calyx, and both are divided into four segments; the root is biennial, and grows in marshy places. The root, which is very bitter, has been extensively employed, in the western country, in place of the genuine colombo, to which, however, it is inferior.

FRAT. See Euphrates.

FRATERNITIES; Religious societies for pious practices and benevolent objects. They were often formed during the middle ages, from a desire of imitating the holy orders. From the twelfth to the fifteenth century, nothing was considered more meritorious than to form and belong to such orders. The laity, who did not wish to pronounce the monastic vows, entered into associations, in order to gain some of the advantages of the religious, even in their worldly life. These societies were at first formed without any ecclesiastical interference, and, on this account, many of them, which did not obtain or did not seek the acknowledgment of the church, had the appearance of separatists, which subjected them to the charge of heresy; as, for example, the Beghards, the Beghards, and Beghards, the Brothers and Sisters of the Free Spirit, the Apostolic Brethren, the Flagellants, and Brothers of the Cross. (See the article Franciscans, whose third order presented similar appearances.) The church, and the Inquisition, were finally convinced, but finally persecuted and suppressed them as heretics. The pious fraternities, which were formed under the direction of the church, or were acknowledged by it, were either required by their rules to afford assistance to travellers, to the unfortunate, the distressed, the sick, and the deserted, on account of the inefficiency of the police, and the want of institutions for the poor, or to perform certain acts of penitence and devotion.

Of this description were the Fratres Pontifices, who flourished, in the south of France, from the thirteenth to the fifteenth century. They built bridges, made roads, repaired fortresses, kept the roads in repair, provided for the security of the highways, and, by alms and gifts, amassed great wealth, which fell into the hands of the Knights of St John, when they were suppressed by Pius II.

Similar to these were the Knights and Companions of the Santa Hermeland in Spain, the Knights of the Familiars and Cross Brothers, in the service of the Spanish inquisition; the Calender Brothers in Germany, &c. The professed object of the Alexians was to visit the sick and imprisoned; to collect alms for distribution; to console criminals, and accompany them to the place of execution; to bury the dead, and to cause masses to be said for those who had been executed, or for
persons found dead. They derived their name from Alexis, their patron saint, and were at first (in the beginning of the fourteenth century) principally composed of men from the lower orders, who pretended to meanas poor as in the Netherlands. They were afterwards increased by the addition of the female branch, the Black Sisters, and spread through the Rhenish provinces. Although lay brothers, they had houses, and formed their order into two provinces, under an ecclesiastical journmen. To the left of their mean habitations, they were also called Collites; and, from their low tone of singing (in German, Lollen) at interments, Lollards; also, from their temperance, the Matemans. They still exist, in the societies for burying dead bodies, in Antwerp, Utrecbt, and Cologne.

The Brothers of Death, of the order of St Paul, were founded at Rouen, in 1620. They were dressed in black, like the Alexians, and were distinguished by a death's head on their scapulary. They were suppressed by pope Urban VIII. Of a similar nature are the penitents who perform charitable acts in penances, in all the principal cities of Italy (in Rome, they are called the Black Penitents), and among whom are persons of all classes, even of the highest nobility.

There are also Gray Penitents (an old fraternity, of an order existing as early as 1264, in Rome, and introduced into France under the name of the Holy Trinity), the black Penitents, of the School of Death, the Black Tom, the Bither, the Brown, the Green, and the Violet Penitents, so called from the colour of their cowl; the divisions of each were known by the colours of the girdle or mantle. The principal fraternities are distinguished by certain privileges. The spiritual and secular authorities favour them, because their activity supplies many defects in the public institutions; and they are often of essential service, as in endowing poor girls, in reclaiming prostitutes, and aiding strangers, and persons in destitute circumstances. See Journal of a Tour in Italy, by Madame de la Robe.

Among the principal societies of this kind are the Fraternity of the Holy Trinity, founded at Rouen, in 1548, by Philip de' Neri, for the relief of pilgrims, and the cured dismissed from the hospitals; the fraternities of shoe-makers and tailors, founded at Paris, in 1645, for the religious instruction of apprentices and journeymen. The Brothers and Sisters of the Christian schools of the child Jesus, founded in 1678, who supported free schools for poor children, and were of great service to neglected young people in France. This body supplied Madame de Maintenon's school, at St Cyr, with female instructors.

The fraternities which were established after the restoration of the elder Bourbon line in France, under the name of missionaries, concealed political designs under the cloak of religion. They were under the direction of the anti-constitutional clergy, and acted with the ultras (Censeur Européen, 1817). These fraternities are not to be confounded with the Brothers and Sisters of Charity, whose hospitals are found in all the principal cities of Catholic Christendom. St John de Dieu, who served in Africa under the banners of Charles V., founded similar societies of charity in Spain, in 1540. They wore a black dress, and received the rules of a mendicant order. Pins V. afterwards gave them the rule of St Augustine. They observe all the monastic vows, and in Europe, in almost every part of which they are found, they have a general superior. Those in America wear brown cloaks, and have a distinct general. The Sisters of the Holy Cross, of the same order, have their establishments the great hotel Dieu at Paris. They receive the sick of every condition, nation, and religion.

In 1685, the order had 224 monasteries.

**FRATICELLI**; the Italian diminutive of fratere, brother, or monk; the name given, towards the end of the thirteenth century, to wandering mendicants of different kinds, and also to certain Franciscans, who pretended to mean as poor as in their full rigour. They soon sunk into contempt, as they seemed to consider Christian virtue as consisting altogether in squalid poverty. See Franciscans.

**FRAU,** German for woman, occurs in many geographical names, as Frauenfeld, Frauenstein.

**FRAUENLOB,** Henry; a name of honour bestowed upon a minstrel (meistersinger), who lived at the close of the thirteenth and the beginning of the fourteenth century, of whose life, however, we know nothing, except that he composed 100 fraternities, and died in that city in 1317. According to the opinion of some writers, he was a doctor of divinity and canon at Mentz. His real name seems to have been Henry von Missen (Meissen), by which he is sometimes mentioned. The principal theme of his songs was the love of the fair sex. For this reason, he was so highly esteemed by the ladies of his time, that they are said to have carried his body with their own hands to the grave, which they buried with their tears, and around which they poured so much wine as to inundate the whole floor of the church. Some of his poems are in the collection of Manesse, and many others in manuscript.

**FRAUENHOFER,** Joseph von, was born at Straubing, in Bavaria, March 6, 1787, and was early obliged to assist his father in his business of a glazier. In his eleventh year, he lost his parents; and, in 1799, he was placed with a looking-glass maker and glass-grinder at Munich. He was unable to pay any tuition fee, and was therefore obliged to serve a six years' apprenticeship. His master would not allow him to go to the Sunday-school, and Fraunhofer almost forgot how to read and write. During his apprenticeship, the house of his master fell down, and the boy remained buried for four hours in the ruins. The king, having heard of this accident, gave him eighteen ducats, and promised to take care of him if he wanted anything. Fraunhofer had still to serve three years, and he spent his money on optical-glasses, which he ground on Sundays, for which purpose an optician allowed him the use of his machine. He soon procured a machine of his own, and used it also for cutting stones, though he had never seen this done. Utschneider, having heard of the boy, and seeing with how many difficulties he had to struggle, arising from his want of knowledge in the theory of optics, lent him books; but his master forbade him to read them, and he was obliged to steal away on Sundays, in order to pursue his studies.

After various vicissitudes in his life, in which he never would ask the king for the fulfilment of his promise, he became, in 1806, connected with Von Reichenbach, who was in want of an optician, as the war then prevented the obtaining of glasses from England. In 1807, Fraunhofer was appointed to superintend the optical instrument manufacture at Benedictbeurn, established by Utschneider. In 1809, Reichenbach left Utschneider, and united his brother, and founded the establishment for dioptrical instruments, at Benedictbeurn. One of the most difficult operations of practical optics was to poli the spherical surfaces of large object-glasses accu-
Fraunhofer invented a method by which he obtained this difference and rendered the surface more accurate than it was left by the grinding. He invented, also, other grinding and polishing machines, and introduced many improvements into the manufacture of the different kinds of glass used for optical instruments, and which he found to be always injurious to the regularities of various objects.

In 1811, he constructed a new kind of furnace, and, on the second occasion when he melted a large quantity, found that he could produce flint-glass, which, taken from the bottom of a vessel containing two cwt. of glass, had the same refractive power as glass taken from the surface. He did not again succeed so well for some years; yet he continued to study the causes of his failure, always melting at once four cwt. He found that the English crown-glass and the German table-glass both contained defects, which occasion irregular refraction. In the thicker and larger glasses, there would be more of such defects, so that, in larger telescopes, this kind of glass would not be fit for object-glasses. Fraunhofer therefore made his own crown-glass. The cause which had hitherto prevented the accurate determination of the power of a given medium to refract the rays of light and separate the different colours which they contain, was chiefly the circumstance that the colours of the spectrum have no precise limits, and that the transition from one colour into another is gradual, and not immediate; hence the angle of refraction cannot, in the case of large spectra, be measured within 10' or 15'. To obviate this difficulty, Fraunhofer made a series of experiments, for the purpose of producing homogeneous light artificially; and, as he was unable to effect his object in a direct way, he invented an apparatus, which enabled him to attain it by means of lamps and prisms. In the course of these experiments, he discovered that bright fixed line, which appears in the orange colour of the spectrum, when it is produced by the light of fire. This line enabled him afterwards to determine the absolute power of refraction in different substances. The experiments to ascertain whether the solar spectrum contains the same bright line in the orange as that produced by the light of fire, led him to the discovery of the innumerable dark fixed lines in the spectrum containing homogeneously coloured rays. This was an important discovery. Fraunhofer has described his experiments relating to these discoveries in vol. v. of the Memoirs of the Royal Bavarian Academy, and in vol. iv. of Gilbert's Annales de Physique. The accounts have been translated into several languages. In 1817, he was chosen a member of the academy of sciences at Munich.

Fraunhofer made other experiments besides those on the reflexion and refraction of the light, particularly on the injection of light, the happy success of which led him to the discovery of the very different phenomena which are produced by the mutual influence of infected rays: for instance, he was enabled to produce perfectly homogeneous spectra of colours entirely without prisms. As these spectra, which are produced simply by fine threads, perfectly equal and parallel, placed close to each other, contain those dark fixed lines, which he had formerly discovered in the solar spectrum, and which were previously thought to be produced by the prism, following the course of the light, the angles could be ascertained with an extraordinary precision, the curious laws of this modification of light could be deduced with unusual accuracy. (See vol. vii. of the Memoirs of the Bavarian Academy, and Part ii. of Schiaparelli's Astronomical Treatises.) The laws of light, as then known, were such that several hypotheses could be adapted to them. Fraunhofer, in endeavouring to find a theory which should embrace his discoveries, saw that they could be satisfactorily explained on the principles of interference that is, according to doctor Young's hypothesis of undulation, with certain modifications. Proceeding on these principles, he established a general analytical expression for the new laws of light, from which it appeared that if he were capable of making an instrument of perfectly parallel threads, so fine that about 8000 would make a line of one Fraunhofer inch, the phenomena produced by them would be modified in a way apparently very complicated. He therefore made a new course of experiments, and invented a machine for division, which enabled him to produce such instruments with the necessary accuracy. The results of these experiments, and especially for his experiments, and, at the same time, executed the engravings for his treatises. Some of the most important instruments, either invented or much improved by him, and now generally known, are the following: the heliometer; the ring-micrometer; the lamp-circular and net-micrometer (described by Fraunhofer, in No. 43 of the Astronomischen Nachrichten, transl. in Philosophical Magazine, March, 1824); the grand parallactic refractor, for the university of Dorpat (see Struve's Description of the great Refractor of Fraunhofer, in the Observatory at Dorpat; Dorpat, 1825, folio, with engravings); &c. At a later period, by order of the king of Bavaria, Fraunhofer made a still larger parallactic refractor, the object-glass of which is of twelve Parisian inches diameter, and of eighteen feet focus, which he carried to greater perfection. In 1819, the optical institution, which had become so famous under his direction, was transferred from Benedictbeurn to Munich, where it occupied, at present, an apartment for fifty persons. The firm, until 1814, was Utschneider, Reichenbach and Fraunhofer; since that year, Utschneider and Fraunhofer. Fraunhofer was member of many foreign academies. This distinguished man died June 7, 1826, probably in consequence of his unremitting labours and the neglect to take proper care of his physical wants. His grave is near that of Reichenbach, who died a few days before him. The appropriate epitaph Approximavit sidera is inscribed on his tomb. See sketch of his life, by Jos. von Utschneider; also the articles Refractor, and Utschneider.

FRECKLES: small spots of a yellowish colour, scattered over the face, neck and hands. Freckles are either natural, or proceed accidently from the jaundice, or the action of the sun upon the part. Heat, or a sudden change of the weather, will often cause the skin to appear of a darker colour than natural, and thereby produce what is called tan, sunburn, &c., which will vary only in degree, and usually disappear in winter. Persons of a fine complexion, and those whose hair is red, are the most subject to freckles, especially in those parts which they expose to the air. The origin of freckles is explained in this way: In the spring, the skin, from the warmth of the sun, becomes dry in winter, and from various other causes, is peculiarly sensitive. The heat of the sunbeams now draws out drops of moisture, which do not dry as rapidly as in summer
These drops operate like a convex glass, to concentrate the rays, which are thus made to act powerfully on the reta matipighi, and the carbon which it contains is half acidified, and this substance, in this state of partial decomposition, may then be used, for while the carbon is] on the face to remove them.

FREDEGONDE; the wife of Chilperic, a Frankish king of Soissons, a woman who, if all that chronicles relate of her is true, must be considered a monster of wickedness. With Brunehaut (q. v.), she was the principal cause of the wars which the sons of Clothaire carried on against each other from the year 561. She was born in 543. The station of her parents is unknown, and, while in the service of the first and second wives of Chilperic, her beauty captivated the king. In order to arrive at the throne, Furnius seems to have urged her marriage by artifice, and the second by assassination. This led to a war between the two brothers Chilperic and Sigebert, Brunehaut, wife of Sigebert and sister of the murdered queen, urging her husband to vengeance. Chilperic was defeated by his brother, besieged in Tournai, and seemed to be in great danger, when Fredegunde, who had now become his wife, found means to have Sigebert assassinated. She then took advantage of the confusion which this event produced in the camp of the enemy, to attack and defeat them, and advanced to Paris, where she took Brunehaut and her daughters prisoners. Chilperic, however, after 15 days, sent Brunehaut back to Metz, where her son Childerics was proclaimed king in 575. The sons of her husband by his first marriage now fell victims to the ambition of Fredegonde, who at length caused Chilperic himself to be assassinated, to obtain the opportunity of gratifying another passion. By the assistance of her brother-in-law, Guntram, king of Orleans, Fredegonde was made regent of the kingdom during the minority of her son, Clothaire II. She gradually extended her authority, was victorious in her wars against the Frankish kings, who had formed an alliance against her, and, on her death, at the age of 55 (577), she left the kingdom, in a flourishing condition, to her son. If Fredegonde was what we have described her from the chronicles, she is a remarkable instance of successful guilt. Brunehaut, the mortal enemy of Fredegonde, attempted to deprive Clothaire II. of the crown, but she was defeated by her vassals, taken prisoner by Clothaire, who, in 613, caused her to be tied to the tail of a wild horse, and dragged till she was dead; her remains were then burned.

FREDERIC; the name of many distinguished monarchs, particularly of Germany. The German name is Friedrich, compound of Frie (peace), and reich (rich), and means peaceful.

FREDERIC I. BARBAROSSA, son of Frederic, duke of Swabia, whom he succeeded in 1147, was born 1121, and received the imperial crown in 1152, on the death of his uncle, the emperor Conrad III. He was the second German emperor of the house of Hohenstaufen, and one of the most able and most intelligent of the sovereigns of Germany. He waged war with success against Boleslaus, king of Poland, in 1157, and raised Bohemia to the rank of a kingdom. His principal efforts were directed to the extent of his dominions in Italy. He undertook six campaigns, to chastise the rebellious cities of Lombardy, which had become rich and powerful, through their commerce and manufactures. The city of Milan, in particular, had resisted his orders, and subjected several cities. The emperor compelled it, after an obstinate resistance (1158), to surrender. The city, having revolted a second time, in 1166, again submitted (1167), but the pope, Alexander III., who had fled to France, excommunicated the emperor, in 1168. The cities of Lombardy entered into a new alliance. The Milanese rebuilt their city, and gained the decisive battle of Como, over the imperial army (1176), the consequence of which was the peace, concluded at Venice (1177), between the emperor, the pope Alexander III., and the cities of Lombardy. The events of the war, which lasted almost twenty years, were not particularly favourable for the emperor. In the mean time, Frederic had declared Lubeck and Ratisbon imperial cities, and, in 1168, State of Hamburg was founded, by an edict of the emperor, which, by the imperial power was increased, and the condition of the citizens raised. Frederic also increased his power by the separation of the duchies of Bavaria and Saxony (1150), which Henry the Lion had held together; but there were two parties of Ghibellines and Glibiliennes (q. v.), which had arisen under his predecessors, were, on this account, the more exasperated against each other. News having been received, that Saladin had retaken Jerusalem from the Christians, and the pope having preached a new crusade, Frederic, with an army of 150,000 men and a thousand volunteers, undertook the third crusade, before the commencement of which, in 1187, a general peace was signed in Germany. The Greek emperor, at Constantinople, had secretly entered into alliance with Saladin and the sultan of Iconium, and attempted to prevent the march of the Germans through his dominions. But Frederic forced his way to Asia, gained two battles over the Turks, near Iconium, penetrated into Syria, and died, in the midst of his successes, June 10, 1190, near Seleucia, in Syria, after basking, as some writers say, in the Cydnus; others say, in the Sarat. He died a brave, liberal, and learned man, and was remembrancers of the inhabitants in good fortune and in reverses; and these qualities alone, in some measure, for the pride and arrogance which were the principal motives of his actions. He possessed a remarkable memory, and, for his age, unusual knowledge. He esteemed men of letters, particularly historians, from whose works he drew the exalted idea of an emperor, which he endeavoured to realize throughout his reign. He appointed his cousin, the bishop Otho of Freysingen, his biographer, and his taste for architecture is still attested by the memorable ruins of the imperial palace erected by him at Gelnhausen, in Wetterau. He was of a noble and majestic appearance, and, notwithstanding his quarrels with the popes, a more faithful adherent to religion than those who used his name to obtain their own purposes. After the emperor's death, the object of the crusade was no longer attainable. His heroic son, Frederic, duke of Swabia, who had accepted the chief command, and founded the Teutonic order, was also carried off by a contagious disease (1191), and only a small part of that powerful army, which Frederic had conducted out of Germany, ever returned to Germany. 

FREDERIC II. HOHENSTAUFEN, grandson of the preceding, born at Jesi, in the marquisate of Acons, December 26, 1194, was son of the emperor Henry VI. and of the Norman princess Constance, heires
FREDERIC II.

of the Two Sicilies. No sovereign of the middle ages, with the exception of Charlemagne and Alfred, was of so great historical importance; and few were so favored by their personal character, and all the such a remarkable series of adventures. His long reign, from 1209 to 1250, belongs to the most remarkable period of the middle ages. He lived at a period when men like Gregory VII. and Innocent III. had raised the hierarchy to a degree of importance almost unparalleled; when the establishment of the orders of knighthood (for the purpose of fighting against the infidels, and of extending the papal jurisdiction), of the mendicant orders, and of the inquisition, the formidable pillars of the ecclesiastical structure were erected; when, by means of the crusades, the people of Europe were first brought into a closer connexion by a common feeling, imbodied in the sign of the cross; when, after many individual voices had been raised in vain, though not forgotten, the Protestantism of the middle ages made itself heard through the Waldenses and the Albigenses; when chivalry, ennobled by religion, obtained in it a source of consistent organization; when the class of free citizens was gradually rising from its long degradation, and was supported in Germany by Frederic, against the aristocracy, although opposed by him in Upper Italy, as contributing to the power of the pope, and when the cities strengthened against the temporal dominion of his father by great confederacies, and completed and confirmed their internal organization by the establishment of corporations; when, in opposition to the system of violence in which the right of the strongest is the strongest right, the first public peace was proclaimed in the German language, and the secret tribunal of the Feeme (q. v.) began its first source-perceivable workings; when the first universities aroused the spirit of inquiry and examination; when the songs of the Provengals had found a home in Germany and Italy, and were sung by emperors and kings:—these were the times in which the great Frederic of Hohenstaufen lived and acted.

Without being tall, Frederic was well formed, of a fair complexion, with a fine forehead, and a nose resembling the antique, and a gentle and kind expression of the eye and mouth. He inherited the chief virtues of his highly distinguished family; was brave, generous, and possessed great talents, highly cultivated. He knew all the languages of his subjects—Greek, Latin, Italian, German, French, and Arabic. He was severe and passionate, mild or liberal, as circumstances required; gay, cheerful, and lively, as his feelings dictated. As his body had been strengthened and rendered graceful by chivalrous exercises, so his mind, notwithstanding the neglect of his education, had been developed by its own vigour, and obtained, in the school of adversity, a versatility of power rarely found in those born to the purple, and an energy of purpose which sustained him in situations in which others would have been reduced to despair. All this strength of body and mind was necessary for a man, who was obliged to repress a powerful aristocracy in Germany, a powerful democracy in Upper Italy, a powerful hierarchy in Central Italy, and to reconcile and unite in closer union, in his southern territories, the different combinations of six sections; who, for forty years, opposed by secular and spiritual arms, by rivals, excommunications and interdicts, victorious or vanquished, endured the rebellion of a son, the treachery of his dearest friend, and the loss of his favourite child.

Frederic was divided under the guardianship of Innocent III. till 1209, when he took upon himself the government of Lower Italy and Sicily. The country
Jerusalem, in which Frederic placed the crown upon his head with his own hands, March 15th, because no priest would even read mass, was put under an interdict, and Frederic was betrayed to the sultan, of which the noble Saracen himself gave him the first information. But Alphonsus returned, without delay, to Lower Italy, recovered his hereditary territories by arms, after an ineffectual attempt at negotiation with Gregory, and baffled all the intrigues of the pope, who was finally compelled to release him from the excommunication. The Lombards were called to the assembly of Ravenna against his son, and would not allow themselves to be deceived by Gregory's public exhortations to peace; nay, when Frederic had reconciled the pope with his Roman subjects, Gregory secretly attempted to persuade King Henry to rebel against his father, and promised him the support of the Lombards. The followers of Henry were already numerous, even in Germany, when he was surprised by his father, and the astonished youth thrust himself at his feet, imploring mercy. But the deluded prince made a second attempt at his life. It is said, by some, that he was commissioned, with his wife and child, to perpetual imprisonment at St Felicia, in Apulia. There is an appearance of harshness in the conduct of Frederic on this occasion; that he should celebrate his third nuptials, with Isabella of England, with great ceremony, almost in the very moment in which he was committing the son of his first wife to prison, and causing him to be formally deposed in the general diet of Mentz, 1235. At this diet, salutary measures were taken for securing the public peace, providing for the distribution of justice, and for encouraging commerce (the importance of which few princes of his time understood as well as Frederic) and agriculture.

Frederic now thought himself strong enough for the struggle with the Lombards, and made his preparations at Augsburg, 1236. The alliance of Ezzelino da Romano, ruler of Verona, and the Ghibelline cities of Upper Italy, doubled his small army. This war and the election of Conrad, his second son, as King of Rome, were, however, interrupted by a short contest with Frederic, duke of Austria, the last of the Babenberg (1237). Soon after the renewal of the war against the Guelph cities of Upper Italy, a victory at Castel Nuovo, in the Oglio, completed the power of Lothaire, Milan, Brescia, Piacenza, Brescia, and all the other cities, surrendered. But Gregory was still more incensed, particularly when the emperor made his natural son, Enzo, king of Sardinia, and prepared for the completion of the conquest of Lombardy. On Palm-Sunday, 1239, he communicated Frederic anew. The emperor continued the war, but he suffered much by the secret treachery of Ezzelino. To bring the war to a complete termination, he marched suddenly against the pope himself (1240), penetrated through Spoleto into the papal dominions, captured Ravenna, and made the pope tremble in his capital. Rome would have fallen an easy prey, had Frederic been able to overcome the last remains of superstition in his own breast. The emperor desired to settle his cause without recourse to extremities, by an assembly of the fathers of the church; but he soon perceived that no Pope could be found, his enemies were summoned to it, and forbade the prelates from going to Rome; but, finding his warnings of no avail, he ordered his son, Enzo, to attack and to destroy the Genoese fleet, and to carry more than one hundred prelates, who had embargoed for Rome, prisoners to Naples. This blow brought the inflexible Gregory to his death-bed, Aug. 21, 1241.

Occupied by these enterprises, Frederic had been unable to encounter the Mongols, who had invaded Germany; but they retired after their victory on the plains of Wahlstatt in 1241. After the short reign of Celestine IV., and the long interregnum which succeeded, Frederic, at length, attempted the con- quest; but Sigismund Fiesco, who, while cardinal, had been his friend, became the most formidable of his enemies, as Innocent IV. He confirmed the excommunion pronounced by Gregory, and fled suddenly from Italy, where the vicinity of the emperor appeared too great a peril. His son, however, had now no alternative, but to appear as a criminal before the judgment-seat of a priest, or to enter on a dangerous contest with the superstition of the age. The pope renewed the excommunication, and summoned a general council at Lyons. Before this council Thaddeus de Susa, chancellor of the emperor, defended his cause with the power of eloquence and truth, and refuted accusations the most malicious and most absurd, brought against him by his enemies; but the struggle was in vain. The holy father pronounced the most dreadful curse upon him; the priests remained silent, extinguished their candles, and threw them to the ground; but, however, justified himself before the princes of Europe, was victorious over the Lombards, crushed a conspiracy in his own court, and retained his firmness even after the defeat of his son Conrad, by his rival, Henry. Conrad was soon after successful, and Henry of Austria died 1247.

The remainder of Frederic's life was passed in conflict. Shortly after a victory in Lombardy, he was surprised by death, and breathed his last in the arms of his natural son Manfred, at Fiorentino, Dec. 13, 1250. He was not allowed by Providence to usher in the bright day of intellectual light in Europe; but his efforts will always form a remarkable epoch in history; and though a century of political and mental barbarism followed, in which the noble house of Hohenstaufen perished, yet we see, in Louis the Bavarian, who resembled Frederic in many points, that his example was not wholly lost, and that a great idea, once brought to light, cannot be easily forgotten.

FREDERIC WILLIAM, generally called the great elector, was born in 1620, and, at the age of twenty years, succeeded his father as elector of Brandenburg. He must be considered as the architect of the Prussian grand-duchy, in more than one point, his reign gave to Prussia a character which it still bears. From him is, in a great measure, derived that military spirit, which is so striking a trait in the character of the people. His reign began when the unhappy thirty years' war was still raging in Germany, and his conduct towards both parties was prudent. In 1641, he concluded a treaty of neutrality with Sweden, notwithstanding the earnest remonstrances of Austria. In 1644, he concluded an armistice with Hesse-Cassel, by which Cleves and the county of Mark were restored to him. According to the terms of former treaties, Brandenburg ought to have received Pomerania, on the death of the duke without heirs (1637); but the elector was obliged, by the peace of Westphalia, in 1648, to leave Anterior Pomerania, the island of Rugen, and part of Hinder-Pomerania to Sweden (which held it until 1814), and receive the latter from that country. After Augsburg, Halberstadt, and Cammin. He directed his attention towards the army, and improved it much. In the war between Poland and Sweden (1655), he was obliged to take part, on account of the duchy of Prussia. He supported both parties in turn, and obtained an acknowledgment of the independence of the duchy of Prussia from Poland, upon whom it was
FREDERIC AUGUSTUS.—FREDERIC II.

formerly dependent. The estates of the duchy of Prussia (now Prussia Proper) were dissatisfied with these changes, because they had taken place without their consent. The Elector, however, by consequence, erected a fortress near Kundisberg. In 1672, he concluded a treaty with the Dutch republic, when this state was threatened by Louis XIV. Though the French retreated from the Netherlands when Frederic William advanced into Westphalia, the success of the whole war was frustrated by the slowness of the Austrian generals and their failure of the elector, who was obliged to retreat from want of provisions. June 6, 1673, he concluded a treaty with France, at Vossem, near Louvain, by which France promised to yield Westphalia, and to pay 800,000 livres to the elector, who, in return, broke off his treaty with Holland, and promised not to render any aid to the enemies of France.

In 1674, the German empire declared war against France. The elector marched 16,000 men into Alsace, but Bourgoinville, the Austrian general, avoided a battle, which was ardently desired by the elector, and retreated to the imperial fortress of Muhlhausen. In the following November, a Swedish army, at the instigation of France, entered Pomerania and the Mark. The elector hastened back, and defeated them, June 18, 1675, at Fehrbellin (q. v.), with 5600 cavalry. In 1678, he concluded a separate peace with France, at Nimoguen, as did also Holland and Spain. France demanded the restoration of all the conquered territories to Sweden. The elector, having refused compliance, formed an alliance with Denmark, and waged a new war against Sweden. But he was at last obliged to submit, by the peace of St Germain, June 29, 1679. He received from France 300,000 crowns and Louis XIV, having occupied several circles of Alsace by his famous chambers de réunion, Frederic William effectuated an armistice of twenty years between France and Germany (in 1684). But when he renewed (1685) his treaty with Holland, and received into his dominions about 14,000 Protestant refugees from France, new difficulties arose between him and France, which brought him into a closer connexion with Austria, particularly as he hoped to receive from that power an indemnification for the three principalities, Liegnitz, Breslau, and Wolau, whose prince had died without heirs, in 1675, and which, according to an old treaty, ought to have fallen to the Elector. He refused, in 1683, the circle of Schwiebus, in 1686, and, in the same year, sent 8000 men to assist the Austrians against Turkey. These troops, under the command of general von Schoning, distinguished themselves at the attack of Buda.

The elector paid great attention to the promotion of agriculture and horticulture, and, by affording protection to the French refugees, gained 20,000 industrious manufacturers, who have been of the greatest advantage to the north of Germany. Berlin was much improved during his reign. He founded the library in that city, and a university at Duisburg, in 1655. He died at Poissam, April 29, 1688, sixty-nine years of age, and left to his son a country much enlarged and improved, an army of 28,000 men, and a well supplied treasury. His colossal statue of bronze, at Berlin, was cast by Jacobbi, in 1700, and is still one of the greatest ornaments of that city.

FREDERIC AUGUSTUS II. and III., electors of Saxony, of Poland. See Frederick Augustus.

FREDERIC WILLIAM I., king of Prussia, son of Frederic I., and father of Frederic the Great (II.), was born in 1688, and displayed a passion for military exercises at an early age. While crown-prince (1706), he married Sophia Dorothea, daughter of the elector of Hanover, afterwards George I. of England. On his accession to the throne, in 1713, he endeavoured to increase the army and reform the finances, and became the founder of the exact discipline and regularity, which have since characterized the Prussian armies. His ridiculous fondness for tall men is well known. He established a regiment of them, and used every means—fraud, force, money—to fill its ranks. Nothing could be more despotism than his military system. In other respects, he studied the happiness of his subjects and the welfare of the state. Soon after his accession, he was recognized as King of Prussia in a treaty with France. Indignant at the humiliations which his father had suffered from the Swedes and Russians, who marched their troops through his dominions with impunity, he determined to protect his subjects from the consequences of any future rupture, and maintained an army of nearly 60,000 men. Frederic was unwilling to engage in the war between Charles XI. and Russia, Poland, and Denmark; but Charles, for whom he had a great esteem, having made a body of Prussians prisoners, he immediately declared war, and put himself at the head of an army of 20,000 men. (See Friedrich XI.) He afterwards interceded in favour of the Protestant princes of the Low countries, and he liberally rewarded the introducers of useful arts. But being void of science and ornamental literature, he regarded them with contempt, and treated their professors with every kind of discouragement. Poetry and philosophy were equally his abhorrence. He banished Voltaire for his metaphysical opinions, and his own son, who had acquired a partiality for polite literature and music, was so continually thwarted by the king, that he determined not to quit Prussia. (See Frederic II.) He was rigorous in his punishments, and always showed an inclination to aggravate rather than mitigate them. In 1734, he fell into a bad state of health, which increased the natural violence of his temper, and he behaved with the greatest brutality to his physicians. He died, in 1740, after having been reconciled to his son, and expressed the greatest regard for him. He expired in his arms. He left behind him an abundant treasure, and an army of 66,000 men. His affairs were in the greatest order and regularity, and to his labours and wisdom was Prussia much indebted for that prosperity and success, which distinguished her till she was humbled by the power of Napoleon.

FREDERIC II., king of Prussia, the greatest monarch of the Spanish house, was born in the castle of Sans Souci, November 21, 1712. He was the son of Frederic William I. and the princess Sophia Dorothea of Hanover. His early education was strict. Although, by the direction of his father, he was instructed only in the details of military exercises and service, his taste for poetry and music was early developed by the influence of his first instructor, the highly gifted madame de Roccoles, and his early teacher, Duhan, who, countenanced by the queen, formed a secret opposition to his father's system of education. The prince's inclination led him to adopt entirely the views of his mother. This gave rise to a conflict between him and his father, in which the king's desire to settle the succession on his younger son, Augustus William. The minister von Grumbkow and Lepold, prince of Anhalt-Dessau, to promote certain plaus of their own, and the Austrian ambassador, von Seekendorf, for different reasons, widened the breach.

Indignant at the opposition and hatred which he experienced from his father, Frederic determined to flee to the court of George II., king of England, his mother's brother. His sister Frederica, and his friends lieutenants Kott and Keith, were the only persons intrusted with the secret of his flight. He intended to start from Weal, whither he had ac-
companied his father. Some incisive expressions of Katt betrayed the intentions of the prince. He was overtaken, brought to trial at Custrin, and obliged to be an eye-witness of the execution of his friend, the archbishop of Hamburg, at a trial conducted with full sovereignty. On the other hand, Frederic renounced all claims to the other Austrian territories, assumed a debt of 1,700,000 Prussian dollars charged upon Silesia, and promised to respect the rights of the Catholics in Silesia. Saxony acceded to this peace; of which England and Russia were the guarantees.

Frederic II. seized the opportunity of a peace, to introduce useful institutions into the conquered territories, and to render his army more formidable. In 1745, on the death of the last count of East Friesland, he took possession of that country, the reversion of which had been granted to his family, in 1644, by the emperor. The war of the Austrian succession continued; the emperor Charles VII. was driven from his hereditary estates of Bavaria, and the Austrians were everywhere victorious. Frederic II. reopened the proposition that an attempt would be made to recover Silesia, entered into a secret alliance with France (April, 1744), and with the emperor, the Palatinate and Hesse-Cassel, at Frankfort (May 22, 1744). He promised to support the cause of the emperor by the invasion of Bohemia, and on condition that he should receive the crown of Konigergits. He entered Bohemia suddenly, August 10, 1744, and captured Prague; but the Austrians and Saxons under Charles, prince of Lorraine, compelled him to evacuate Bohemia before the close of the year. The death of the emperor (January 18, 1745), and the defeat of the Bavarians at Plattenhofen, obliged Maximilian Joseph, the young elector of Bavaria, to conclude the peace of Fressen with Maria Theresa, and occasioned the dissolution of the alliance of Frankfort, after Hesse-Cassel had already declared itself neutral. Besides this, Austria, England, the Netherlands, and Saxony had entered into an alliance at Warsaw (January 5, 1745), and Saxony had concluded a separate treaty with Austria against Prussia (May 18, 1745). But Frederic defeated the Austrians and Saxons (June 4, 1745), at Hohenfriedberg (Striegau), in Silesia, entered Bohemia, and gained a second victory at Sor, after a very obstinate combat, September 30, 1745. The victory of the Prussians under Leopold, prince of Dessau, over the Saxons, at Resselsdorf, December 15, 1745, led to the peace of Dresden (December 25), on the basis of the peace of Berlin. Frederic retained Silesia; acknowledged the husband of Maria Theresa, Francis I., as emperor, and Saxony promised to pay 1,000,000 Saxan dollars to Prussia.

During the eleven following years of peace, Frederic devoted himself, with the greatest activity, to the domestic administration, to the improvement of the army, and, at the same time, to the arts. It was at this time that he wrote his Mémoires de Brandenburg, his poem L'Art de la Guerre, and other works in prose and verse. He encouraged agriculture, the arts, manufactures, and commerce, reformed the laws, increased the revenues of the state, perfected the organisation of his army, which was increased to 120,000 men, and thus improved the condition of the state.

Secret information of an alliance between Austria, Russia, and Saxony, gave him reason to fear an attack and the loss of Silesia. He hastened to anticipate his enemies by the invasion of Saxony (Aug. 24, 1750), with which the seventh war (q. v.), or third Silesian war, commenced. The peace of Hubert-burg, February 15, 1753, of which those of Breslau (1742) and Dresden (1745) were the
basis, terminated this war, without any foreign interference, on the principle, that the contracting parties should remain in statu quo. Frederic came out of this war rich and glorious, which promised him, in the future, a decisive influence in the affairs of Germany and Europe. His next care was the relief of his kingdom, drained and exhausted by the contest. He opened his magazines to furnish his subjects corn for food and for sowing. To the pensions, distributed horses for ploughing, rebuilt, at his own expense, the houses destroyed by fire, established new settlements, built manufactories, and laid out canals. Silesia was excused from all taxes for six months, the Neumark and Pomerania for two years. In 1764, Frederic founded the bank of Berlin, with a capital of 9,000,000 Prussian dollars. His attempt, in 1766, to organize the excise on the French system met with great censure. Several good institutions were established during this interval of peace; but the new code of laws was completed and carried into operation under his successor.

A treaty was concluded with Russia (March 31, 1772), by consequence of which Frederic supported the election of the new king of Poland, Stanislaw Poniatowski, and the cause of the oppressed Dissidents (q. v.) in Poland. For the purpose of connecting Prussia with Pomerania and the Mark, and of enlarging and consolidating his territories, Frederic consented to the first partition of Poland, which was first proposed at Petersburg, and concluded August 5, 1772. Frederic received the whole of Polish Prussia (which had been ceded to Poland by the Teutonic order, in 1466,) with the part of Great Poland to the river Netz, excepting Dantzic and Thorn. From this time, the kingdom of Prussia was divided into East and West Prussia. The king erected a fortress at Dantzic, and published a code of war and peace, for the domains at Marienwerder. The plans of the emperor Joseph II., who visited him in Silesia, in 1789, and whose visit he returned in Moravia, in 1770, could not escape his vigilance. He declared against the possession of a large part of Bavaria by Austria, in 1778, after the death of Maximilian Joseph, elector of Bavaria, without issue. Charles Theodore, elector of the Palatinate, inherited as the nexi heir, and had consented to a cession; but the duke of Deux-Ponts, presumptive heir of the Bavarian Palatinate, and the elector of Saxony, who had also claims to the inheritance of Bavaria, refused to acknowledge this cession. Austria was repelled from her designs in Saxony. Saxony therefore formed an alliance with Prussia, and Frederic invaded Bohemia with two armies (July, 1778). The emperor Joseph kept his position, in a strongly fortified camp, behind the Elbe, near Iarmirz, and could not be induced to give battle. The aged empress Maria Theresa wished for peace. Negotiations were commenced in the monastery of Braunau (in August), but were broken off without being brought to any result. But, Catharine II. having declared her intention of assisting Prussia with 60,000 men, this war of the Bavarian succession was terminated without a battle by the peace of Teschen (q. v.), May 15, 1779. Frederic had generously declared, in the beginning of the negotiations, that he would not demand any reimbursement of the expenses of the war. Austria consented to the union of the principalities of Franconia with Prussia, and renounced the feudal claims of Bohemia to those countries. In the evening of his active life, Frederic declared, in a state of rebellion with Saxony and Hanover, the confederation of the German princes, July 23, 1782.

An incurable dropy hastened the death of this great king. He died at Sans-Souci, August 17, 1786, in the seventy-fifth year of his life and the forty-seventh of his reign, and left to his nephew, Frederic William II., a kingdom increased by 29,000 square miles, more than 70,000,000 Prussian dollars in the treasury, which protected him, in the future, a decisive influence in the affairs of Germany and Europe. His next care was the relief of his kingdom, drained and exhausted by the contest. He opened his magazines to furnish his subjects corn for food and for sowing. To the pensions, distributed horses for ploughing, rebuilt, at his own expense, the houses destroyed by fire, established new settlements, built manufactories, and laid out canals. Silesia was excused from all taxes for six months, the Neumark and Pomerania for two years. In 1764, Frederic founded the bank of Berlin, with a capital of 9,000,000 Prussian dollars. His attempt, in 1766, to organize the excise on the French system met with great censure. Several good institutions were established during this interval of peace; but the new code of laws was completed and carried into operation under his successor.

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commerce and manufactures, encouraged agriculture and the working of mines, and much increased the wealth of his people and his own revenues. He was a liberal patron of the arts and sciences, instituted societies for the improvement of painting, sculpture, and the other liberal arts, and opened them into the Levant, for the purpose of making discoveries in natural history and antiquities, and founded places of instruction for the Laplanders. He died January, 1760. He was twice married, first to Louisa, daughter of George I., and secondly to Juliana Maria, daughter of the late Frederick the Great, and heiress of Prussia.

FREDERICS OORD. See Colonies, Panser, after the article Colony.

FREE CITIES. The cities of Germany originated chiefly during the reign of the Carlingvianths and the emperors of the Saxo house, and remained, for a long time, dependent on the secular or spiritual authority, who often exercised their authority in a very oppressive manner. The disturbances under Henry IV., encouraged the inhabitants of some of the cities (Worms and Cologne) to arm themselves. They offered their services to the emperor, who gladly accepted them, as they were under the influence of that condition which rendered very agreeable. Commerce and manufactures gradually increased their importance; they frequently assisted the emperors in repressing the arrogance of the nobles, and, in return for their services or contributions, received various privileges and immunities. In this manner, the imperial cities originated in the middle of the twelfth century. Gennemer, however, has proved by means of documents, in his work, Uber den Ursprung der Stadt Regensburg und aller alten Freistädte, nämlich der Stadt Basel, Strassburg, Speyer, Worms, Mainz, etc., that the origin of the City of Ratisbon, and all the ancient Free Cities; in particular, those of Basle, Strassburg, Speir, Worms, Mentz, and Cologne, Munich, 1817—there that were free cities in Germany, which existed from the time of the Romans, and had little in common with the free cities of later times, and which, in the beginning of the sixteenth century, lost their most essential privileges, and even the name of free cities, through the ignorance and carelessness of their magistrates. The most important of those privileges, as is shown particularly in respect to Ratisbon, were, that they should alone declare this man free, and that they should never swear allegiance to any emperor or king; nor be obliged to engage in any expedition against the Romans, or to pay the privilege of exemption; nor to pay any contributions whatsoever to the empire; nor be in any way reckoned among the cities of the empire. In one word, until the period above mentioned, they constituted independent republics. The cities of Lombardy, enriched by commerce, and encouraged by the assistance of the popes, often ventured to resist their masters, the emperors, and could not be reduced to obedience without great destruction. (The exact origin of the cities of Ratisbon, Mannheim, and other cities of the same denomination, are also encouraged those of Germany. In the middle of the thirteenth century, two important confederacies were established for common objects—the Hanseatic league (q.v.) (1241), and the league of the Rhenish cities (1245). The powerful Hanseatic league lasted nearly four centuries, until its dissolution was effected by several causes, in 1630. The remnants of this league, with the former confederacy of cities, which had its representatives in the German diet, and the free cities of Hamburg, Bremen, and Lubeck, were incorporated with the French empire in 1810. As the city of Ratisbon is the first of the German independence, they were acknowledged, together with Frankfort, as free cities, by the congress of Vienna. As such they joined the German confederacy, June 8, 1815, and obtained the right of a vote in the diet. In conformity with the twelfth article of the constitution of the German confederacy, they established a common supreme court of appeal, in 1830. By the general act of Vienna, the city of Frankfort, with its territory as it was in 1803, was declared free, and a member of the German confederacy. It was required that its constitution should establish a perfect civil and political equality of the different religious sects. Lubeck, Bremen, and Luneberg, have received similar concessions, as they were before the year 1810. Besides these four free cities in Germany, Cracow was likewise declared a free city by the general act of the congress of Vienna, and is under the protection of Russia, Austria, and Prussia. A perfect neutrality has been guaranteed to it by these three powers, and the limits of its territory have been accurately defined.

FREEDMEN (liberti, libertini) was the name applied by the Romans to those persons who had been released from a state of servitude. The freedman wore a cap or hat, as a sign of freedom, (hence the origin of the word, liberty) assumed the name of his master, and received from him a white garment and a ring. With his freedom he obtained the rights and privileges of a Roman citizen of the plebeian rank, but could not be raised to any office of honour. He always remained in a certain moral dependency (tutelatum pietatis) on his former master. They owed each other reciprocal aid and support. If a master, leading his slave by the hand before the prætor or consul, declared, "I desire that this man be free, according to the custom and usage of the Romans." If the latter consented, he gave the slave a blow on the head with a rod, saying, "I declare this man free, according to the custom and usage of the Romans." The lictor, or the master of the slave, then turned him round, gave him a blow on the cheek, and let him go, intimating that he might depart where he pleased. The whole proceeding was entered on the registers of the prætor, and the slave received a cap and hat, the badge of freedom, in the temple of Feronia.

The manumitted slaves in the United States of North America and in European colonies have this disadvantage in comparison with the freedmen among the ancients, that their colour continually recalls their former condition. The former coloured his hair and face, and was like a white man in power, market, and social estimation; but the manumitted negro colour sunk in the mass of society, and was always considered as a race. This has prevented them from being admitted to the full rights of citizenship in the United States. (See Sketch of the Laws relating to Slavery in the United States, by George M. Stroud, Philadelphia, 1827.) In Colombia, the emancipation of all the blacks having been provided for, there is much less unwillingness on the part of the whites to associate with them, and some distinguished officers, in the war of independence in that country, were permitted to abandon their colour. FREEDOM OF CORPORATION, the right of enjoying all the privileges and immunities that belong to it. The freedom of cities and corporations is regularly
obtained by serving an apprenticeship; but it is also purchased with money, and sometimes conferred by way of compliment.

FREEHOLD, in law; that land or tenement which a man holds in fee-simple, fee-tail, or for term of life. Freesthold in demesne is the real possession of lands, &c., in fee or for life. Freehold in law is the right a person hath to such lands or tenements before his entry. Freehold also includes offices held in fee or for life. See Fee.

FREEMASONRY. See Masonry.

FREETHINKER; a person who rejects revelation; a deist. The term originated in the eighteenth century, and, like the French esprit fort, contains a sneer at believers. Free-thinking, in England, first appeared in the form of opposition to abuses in the church, which were attacked in the reigns of James II. and William III. Dodwell, Steele, Anth. Collins (who first made it a name of a party, by his Discourse of Free-thinking, London, 1713), and his friend, John Toland, are among the number. In 1718, a weekly paper was published, entitled the Free-Thinker in Wit and Humour, &c. Math. Tindal (who died 1738), Morgan, and Bernard Mandeville extended free-thinking to morals. Lord Bolingbroke and Hume are the most distinguished free-thinkers. Free-thinking also originated in France, from the abuses of the church, but assailed all revealed religion. Voltaire and the encyclopaedists D'Alembert, Diderot, and Helvetius (the author of the Système de la Nature) led the opposition against revealed religion. The same spirit became fashionable in Germany in the reign of Frederic the Great.

FREEZE, or FRIEZE, in commerce; a coarse kind of web, flannel stuff or cloth; so called as being freezed or mapped on one side.

FREEZING, CONGELATION, in philosophy; the transformation of a fluid body, into a firm or solid mass, by the action of cold. The process of congelation is always attended with the emission of heat, as is found by experiments on the freezing of water, wax, spermaceti, &c.; for in such cases it is always found, that a thermometer dipped into the fluid keeps continually descending as this cools, till it arrives at a certain point, being the point of freezing, which is peculiar to each fluid, where it is awhile stationary, and then rises a little, while the congelation continues at the same time, the body is expanded. The prodigious power of expansion evinced by water in the act of freezing, exerted in so small a mass, seemingly by the force of cold, was thought a very material argument in favour of those who supposed that cold, like heat, is a positive substance. Doctor Black's discovery of latent heat, however, has afforded an easy and natural explanation of this phenomenon. He has shown that, in the act of congelation, water is not cooled more than it was before, but rather grows warmer; that as much heat is discharged, and passes from a latent to a sensible state, as, had it been applied to water in a fluid state, would have heated it to 130°. In this process, the expansion is occasioned by a great number of minute bubbles suddenly produced. Formerly these were supposed to be cold in the abstract, and to be so subtle, that, insinuating themselves into the substance of the fluid, they augmented its bulk, like that, by impeding the motion of its particles upon each other, they changed it from a fluid to a solid. But these are only air extricated during the congelation; and to the extrication of this air we ascribe the prodigious expansive force exerted by freezing water. By what means does this air come to be extricated, and to take up more room than it naturally does in the fluid? Perhaps part of the heat, which is discharged from the freezing water, combines with the air in its elastic state, and, by restoring its elasticity, gives it that extraordinary force, as is seen also in the case of air suddenly extricated in the explosion of gunpowder. A very great degree of cold is produced by mixing snow with certain salts. The best salt for this purpose is muriate of lime. If this be mixed with dry, light snow, and the two bodies be stirred well together, the cold produced will be so intense as to freeze a man in a few minutes. Common salt with snow produces a great degree of cold. Evaporation likewise produces cold. The method of making ice artificially in the East Indies, depends upon this principle. The manufacturers at Benares dig pits in large open plains, the bottom of which they strewn with sugar-canes, or dried stems of maize, or Indian corn. Upon this bed they place a number of unglazed pans, made of so porous an earth, that the water oozes through their substance. These pans are filled, towards evening, in the winter season, with water which has been boiled, and are left in that situation till morning, when more or less ice is found in them, according to the temperature of the air. A little more ice is more formed in dry and warm weather than in cloudy weather, though it may be colder to the human body. Every thing in this operation is calculated to produce cold by evaporation; the beds on which the pans are placed, suffer the air to have a free passage through their bottoms, and the pans, constantly oozing out the water to their external surface, are cooled by the evaporation of it. In Spain, a kind of earthen jars, called baxaros, is used, the earth of which is so porous, being only half-baked, that the outside is kept moist by the water which filters through it; and, though placed in the sun, the water in the jar becomes as cold as ice. It is a common practice in China, to cool wine or other liquors by wrapping a wet cloth round the bottle, and hanging it up in the sun. The water in the cloth evaporates, and thus cold is produced. Ice may be produced at any time by the evaporation of ether.

Professor Leslie discovered that porphyritic trap, pounded and dried, will absorb one-tenth part of its weight of moisture, and can hence be easily made to freeze the eighth part of its weight of water. In hot countries, the powder will, after each process, of making and recovering, and by the bulk of the water, which is thrown off, occasion a curious and beautiful discovery of artificial congelation, will, therefore, produce ice in the tropical climates, or even at sea, with very little trouble, and no sort of risk or inconvenience. Leslie has lately discovered that parched oatmeal is even a more powerful absorber than the whinstone; and with a stratum of oatmeal, about a foot in diameter, and one inch deep, he froze a pound and a quarter of water, contained in a hemispherical porous cup. The meal is easily dried, and restored to its former use.

FREEZING POINT denotes the point or degree of cold, shown by a mercurial thermometer, at which certain fluids begin to freeze, or, when frozen, at which they begin to thaw again. On Fahrenheit's thermometer this point is at + 32 for water, and at — 40 for quicksilver, these fluids freezing at these two points respectively. See Thermometer.

FREIGHT is the consideration in money agreed to be paid for the use or hire of a ship; or in a larger sense, it is the burden of such ship. The freight is most frequently determined for the whole voyage without respect to time; sometimes it depends on time. In the former case, it is either fixed at a certain sum for the whole cargo, at so much per ton,
barrel, or other weight or measure, or so much per cent. on the value of the cargo. See Charter-Party.

FREINSHEIMUS, John, born at Utrecht, 1608, displayed brilliant talents at an early age, and entered the university in his fifteenth year. He studied law in Marburg and Giessen. He afterwards made use of the libraries in France, and became acquainted with the learned men of that country. A Latin eulogy on Gustavus Adolphus made him favourably known by its vigorous eloquence and fine style; and he was invited to Sweden, in 1662, as professor of political economy and of eloquence at Upsal. His reputation induced queen Christina to appoint him librarian and historiographer in Stockholm, in 1647. But, although his position was agreeable, and he was in great favour with the queen, the climate was so unfavourable to his health, that he was obliged to return to Germany, where he was appointed by the elector palatine honorary professor in the university of Heidelberg, with the title of electoral counsellor, and died there August 30, 1633. He showed himself a profound scholar, such as was never before seen, and published various editions of several classics, and by his excellent supplements of the lost books and passages of Curtius and of Livy. His German epic poem on Bernhard, duke of Wurtem, entitled The Desert and Deeds of the modern Hercules, remains in deserved oblivion.

FRENCH BEANS, or KIDNEY BEANS, the haricots of the French, are the product of the Phaseolus vulgaris, supposed to be a native of the East Indies, but now commonly cultivated in all parts of the globe. This plant is an annual vine, bearing alternate leaves, which are situated on footstalks, and composed of three oval pubescent folioles. The flowers are white, somewhat resembling those of the pea, and have the carina, style, and stamens twisted spirally. The seeds are more or less reniform, and are of all colours; either pure white, yellowish, red, cupreous, black of various shades, or variegated. A great number of varieties are cultivated; among which is that commonly called Lima bean. Within the tropics, French beans may be sown at all seasons of the year, but in temperate regions only in the spring, and usually near the latter part of the season, as the plants are very tender, and liable to be injured by frosts. A light, dry, and tolerably fertile soil is best suited, but they may be sown early, a warm situation should be selected. Low and wet grounds are altogether unfit for them. Throughout all Europe, and in America, they are an important object of cultivation, and are eaten prepared in various manners.

FRENCH HISTORY, LITERATURE, &c. See France.

FREREET, Nicholas, born at Paris, 1688, son of a procureur to the parliament, abandoned his profession of law to devote himself to the study of history and chronology. In his sixteenth year, he had read and made extracts from the principal works of Scaliger, Usher, Pococke, and other distinguished chronologers. He made Rollin his model. The academy of inscriptions elected him a member at the age of twenty-five. On account of his discourse on his admission into the academy, Sur l'Origine des Francois, which was as learned as it was bold, and contained some observations and criticisms, that he was confined six months in the Bastile. The Biographie Universelle contradicts the story, which has been often repeated, that Bayle was almost the only author that was allowed to him in confinement, and that he read him so often that he knew him by heart. The Biographie says that he read in his prison the greater part of the Greek and Latin writers, and that he devoted himself particularly to the Crypotedia of Xenophon. The frequent perusal of Bayle in prison has been treated as the origin of the atheistical opinions manifested in the Lettres de Traghetti à Lescipe, and the Examen des Apologistes du Christianisme; but the Biographie maintains that those works were not his, but were falsely ascribed to him after his death. After he was set at liberty, the marshal de Nollies confided to him the education of his children, and he continued his literary pursuits without interruption. He returned, in 1723, to his father's house, and entered upon the study of the chronology of the ancients. He found that the Egyptian history, the earliest of all, begins only 2900 years before Christ, and that the Chinese precedes the Christian era only 2575 years. His treaties and controversies on this subject, among others with Newton, compose a great part of the memoirs of the academy at that time. He studied geography with the same diligence; 1357 charts, drawn by himself, were found among his papers. He was a stranger to no science, and wrote with great readiness. In 1742, he was appointed perpetual secretary of the academy, and died in 1749. An edition of his works appeared in Paris, 1792, in 4 vols.; a second collection, 1795, in 20 vols. An augmented and well arranged collection (Oeuvres complètes de Fréron), with annotations and explanations, by Champollion-Figeac, has appeared in Paris, commencing in 1825, in 90 vols.

FRÉRON, Elie Catharine, born at Quimper, 1719, received his education from the Jesuits, and taught for some time in the college of Louis le Grand, where Brumoy and Bougeant awakened his taste for literature. He published, in 1746, a journal entitled Lettres de Madame la Contesse de —. The contents was to be the representative of sense and good taste, and certainly displayed much talents and wit in her correspondence. Some authors, whom he had treated with little respect in his journal, succeeded in having it suppressed; but, in 1749, it appeared under a new title, Lettres sur quelques Ecrits de ce Temps, the severe criticisms in which several times caused interruptions in its publication, but always to the displeasure of the public. King Stanislaus, of whom the author was a favourite, protected the work, which he read with pleasure, and prevented the arrest of Fréron. After having published thirteen volumes of the journal, he died from 1754, under the title of Année Littéraire, till his death, 1776. Fréron, on account of his severe criticism of Voltaire's La Femme qui a Raison, had a most violent contest with that satirist. His son, Stanislas Fréron, commenced, 1789, the Ouvrabe du Peuple, and was, notwithstanding his mild temper, for a long time the most zealous adherent of Robespierre.

FRESCO PAINTING; a term of art, applied by the Italian artists to pictures executed in distemper or size colours. On the revival of the arts in Europe, it became customary to decorate the outsides of churches, palaces, cloisters, and convenants, with historical pictures; and, as these were exposed to the impressions of the atmosphere, the term alt fresco was applied to the species of painting itself. The decorations and scenery in our modern theatres are likewise executed in distemper, or fresco, but there are certain parts of the building on which we shall attempt to describe. The size of the wall to be decorated being ascertained by accurate measurement, a finished drawing on paper, called a cartoon, was first made, to serve as a model. The artist, then, had a certain portion of the wall covered over with a fine sort of signinco, or Roman cement, of the thickness of an inch, or more, and upon this por-
tion he traced off from his cartoon enough to fill the space. But, as it was necessary to the success and permanency of his work that the colours should be applied in this form to the fresco, no second preparation was applied at one time than what the artist could finish with convenience in one day. The first part of his operation, after the tracing, was to lay in the masses of colour with a large brush, and then to finish up the parts by delicately hatching them over with a series of minute strokes, by means of smaller brushes.

In old writers on fresco painting, different processes are described for mixing up and preparing the colours; but they all agree in stating that the colours should all be native earths or minerals, as lakes and vegetable colours will not stand, and that the whites made use of should be of white chalk, or powdered marble. Secondly, that the vehicle should be a solution of animal glue, prepared by boiling the skins of animals or fishes, such as parings of parchment, glove leather, &c., or from the whites of eggs. One old author, indeed, directs that a certain number of fresh eggs, yolks and whites, &c., should be boiled up, and pounded in a marble mortar, and that a small portion of good vinegar (say a gill to six eggs) should be added, and the whole mixture beat up with a bunch of fresh twigs cut from a fig-tree. In this way, the white and yolks of the eggs form a sort of emulsion, and, the vinegar dissolving the earthy matter of the shells renders the vehicle more binding; the yellowness of the eggs would not materially alter the colours, neither would the whites be tarnished thereby, being of chalk, which would not be the case if white lead or ceruse were employed. As to the fig leaves, it is well known that the juice given out by them is a species of Indian-rubber, or caoutchouc—an elastic gum which will render the colours less liable to crack. In this manner all the finest fresco paintings of the churches in Italy have been executed. The Sistine chapel, Vatican, Grotto Ferrato, Farnesine palace, &c.

It is pretended that there are specimens of fresco painting extant of the time of Constantine the Great. It began to revive in the sixteenth century. The example of Michael Angelo and Raphael shows how worthy it is of the greatest artists. The painter cannot seduce the senses by soft tints and tender harmony of colours; he is, therefore, reduced to deal with harsher forms of expression. If oil painting is better suited for nice expressions of the slightest emotions of the heart, fresco painting is the field which the true poet-painter will prefer. What can be more sublime than the Last Judgment of Michael Angelo, in the Capella Sistina! How rich and vast are Raphael's conceptions in the stanzc and loggie! The Germans possess at present the most distinguished fresco painters, and Cornelius has established his fame by his grand fresco pictures in the Glyptotheca in Munich. Schnorr is also distinguished in this line, and the villa Massini, near Rome, is a fine monument of contemporary German art, as Overbeck, Schnorr, and Feith painted the three rooms in fresco. Fresco painting was long disregarded, when all noble and grand conceptions seemed to have fled from the art; and it is only in recent times that it has been taken up again, chiefly by the Germans.

FRESNE, charles alphonso du; a native of Paris, eminent in the sister arts of painting and poetry; was born in 1611. He was intended by his family for the legal profession, and was for a time discarded by them in consequence of his determination to follow the bent of his genius, which led him to put himself under the tuition of Vouet and Perrier, who instructed him in the rudiments of his favourite art. In 1634, he accompanied his friend Mignard to Italy, and was, at this period of his life, mainly occupied in studying the masters. He returned to France in 1656, having, during his stay in Italy, completed his well known poem, De Arte Graphica, which did not, however, appear till three years after his decease, when his friend De Piles published it (in 1668), with his own annotations. This work has been three times translated into English, first by Dryden, in 1694, then by Graham, and lastly by Mason, in 1782; to the latter edition are attached some notes from the pen of Sir Joshua Reynolds. Du Fresnoy's pictures do not exceed fifty in number. Titian and the Caracci appear to have been his principal models; the tints of the one and the design of the others being the manifest objects of his study and imitation. They are much admired, and, though they were of but little profit to the painter, are now of considerable value. He died in 1665, of a pulmonary complaint, at the age of fifty-four.

FRES'T; certain short pieces of wire fixed on the finger-boards of guitars, &c., at right angles to the strings, and which, as the strings are brought into contact with them by the pressure of the fingers, serve to vary and determine the pitch of the tones. The frets are always placed at such distances from each other, that the string which touches any particular fret is one semitone higher than if pressed on the next fret towards the head of the instrument, or one semitone lower than when brought into contact with the next fret towards the bridge. Formerly, these frets, or stops, consisted of strings tied round the neck of the instrument.

FREUDE (foy) a German word, which forms a part of many geographical names, as Frendshul, Valley of Joy.

FreyA. See Northern Mythology.

Freyberg, a celebrated mining town of Saxony, circle of the Erzgebirge (q. v.), on the Munsbach, owes its origin to the discovery of silver mines in the neighbouring country, in the twelfth century, when miners from the Harz mountains settled there in 1195. In the beginning of the sixteenth century, Freyberg had 30,000 inhabitants, but the thirty years' war, that scourge of Germany, destroyed the prosperity of the place. It has at present 1100 houses, with 9000 inhabitants (lat. 50° 55' N.; lon. 13° 18'; 1249 ft. above the sea); a garrison of 1500 men, and 1400 inhabitants of different nations. In the cathedral is the tomb of the celebrated mineralogist Werner. (q. v.) The city has a good school and library; but the most important institution, which is unique in the world, is its mining academy, founded in 1765. Werner made it known all over the scientific world, and some of the most distinguished naturalists of the age have been formed there; e.g., Humboldt. In 1791, a spacious building was erected, which contains the lecture-rooms, the library, the institution for selling mineralogical specimens, and the rich Wernerian museum, or collections illustrative of oryctognosy and mining, given by Werner to the academy. There are ten professors for the mining sciences and their auxiliary branches. Some of the Saxon students receive instruction gratuitously, besides having an allowance, and labour in the mines, at their leisure hours, like common miners, for a little higher wages. The chief mining school is preparatory to the academies. There are four manufactories in Freyberg, but its chief support is derived from mining and the manufactures connected with it. About 10,000 labourers are employed in the mines in the neighbourhood. The mine called Himmelsturz, is celebrated for its productivity, for the excellent manner in which it is worked, and for the machinery employed in it. It
had been worked for two centuries uninterruptedly, and yields annually about 70,000 dollars worth of silver. It afforded, from 1769 to 1818, 2176 cwt. of silver. Among the establishments in the neighbourhood are the large silver furnaces, and particularly the amalgamating works, where 60,000 cwt. of ore is melted annually. According to Breithaupt's *Die Alte und freie Bergstadt Freiberg in Hinsicht ihrer Geschichte, Statistik, Cultur und Gewerbe* (Freyberg, 1825), the mines of this city have yielded 240 millions of Saxon dollars, or 80,000 cwt. fine silver, in 640 years.

FREIBURG; formerly capital of the Brisgau, now the chief place of the circle of the Treisam, in the grand duchy of Baden, to which the Brisgau was ceded by Austria, at the peace of Friesburg (1803.). Freiburg is situated in a romantic district in the Black Forest; population, 10,000. Its minster, the Gothic steeple of which is 513 feet high, and is one of the few Gothic steeples which is complete, is a magnificent edifice. Vater has published lithographic views of it (Freyburg, 1850), and Schreiber delineates it moving upon a university, which has some men of distinction among its professors, and in which the number of students increases, was established in 1746. It is highly creditable to so small a country as Baden, which contains also the celebrated university of Heidelberg. The vicinity of the Black Forest, and the district within 15 miles, in 1825, had 600 students. Freiburg has likewise a forest academy and a polytechnic school.

FRIEBURG ; a canton of Switzerland, surrounded by the cantons of Berne and Vaud, except a narrow part, which touches the lake of Neuchatel. The north-west part of the country is more level than the rest, and produces abundance of corn and fruit; the other parts are mountainous, but contain good pastures, which feed great herds of cattle. The chief exports are cattle, butter, and particularly the excellent cheese known by the name of Gruyere. Square miles, 795; population, 67,874; 7500 Protestants, the rest Catholics.

FRIEBURG ON FREIBURG ; called *Fribourg in Uechland*, to distinguish it from *Fribourg in the Brisgau* ; a town in Switzerland, capital of a canton of the same name, sixteen miles S. W. of Berne, twenty-seven N. E. of Lausanne; lon. 6° 48' E.; lat. 46° 51' N. The town is situated on three rivers, eight convents, three hospitals, and a college, with fifteen professors. It is situated on the Sanen, and almost surrounded by it. Part of it is built on an elevated rock, part of it in a deep valley, and towards the west it occupies a small plain. The streets are irregular, steep, clean, and tolerably wide; the houses are well built, and some of them handsome. It is surrounded with walls, towers, and sharp rocks. The small river which divides the town also makes the boundary between the German and French languages; and it is curious to see the population of one city, who have lived for centuries together, still distinguished in language, customs, and manners.

FRICTION ; the act of rubbing two bodies together, or the resistance in machines caused by the motion of the different parts against each other. Friction arises from the roughness of the surface of the body moved on, and that of the moving body; for if two bodies are at no contact, and that of their surfaces; but surfaces and cavities, these act against each other, and prevent the free motion that would ensue on a supposition of the two bodies being perfectly polished planes.

Mr Ferguson found that the quantity of friction was always proportional to the weight of the rubbing body, and not to the quantity of surface; and that the resistance increased with an increase of velocity, but was not proportional to the augmentation of celerity. He found also, that the friction of smooth soft wood, moving upon smooth soft wood, was equal to one-third of the weight; of rough wood upon rough wood, one-half of the weight; of soft wood upon hard, or hard upon soft, one-fourth of the weight; of polished steel upon polished steel or pewter, one-quarter of the weight; of polished steel upon copper, one-fifth; and of polished steel upon brass, one-sixth of the weight.

Coulomb made numerous experiments upon friction, and, by employing large bodies and ponderous weights, and conducting his experiments on a large scale, corrected several errors, which necessarily arose from the limited experiments of preceding writers. He brought to light many new and striking phenomena, and confirmed others, which were previously but partially established. We cannot, in a work of this kind, follow M. Coulomb through his numerous and varied experiments; all that can be expected will be a short abstract of the most interesting of his results; a few of which are as follows:—1. The friction of homogeneous bodies, or bodies of the same kind, is always less than that of different bodies, which is greater than that of heterogeneous bodies; but Coulomb showed that there are exceptions to this rule.

2. It was generally supposed that, in the case of wood, the friction is greatest when the faces are drawn contrary to the course of their fibres; but Coulomb showed it operates as often in the same as in the opposite direction.

3. The longer the rubbing surfaces remain in contact, the greater is their friction.

4. Friction is, in general, proportional to the force with which the rubbing surfaces are pressed together, and is commonly equal to between half and one quarter of that force.

5. Friction is not generally increased by augmenting the rubbing surfaces. But friction is not increased by an increase of velocity; at least, it is not generally so; and, in some cases, even decreases with an increase of celerity.

6. The friction of cylinders, rolling upon a horizontal plane, is in the direct ratio of their weights, and in the inverse ratio of their diameters.

An easy method of experimenting on the friction of surfaces, is, to place a plank with its upper surface level, and on this a thin block of the matter to be tried, with a cord fixed to it, which block may be loaded with different weights; and a spring steel balance attached to the other end of the cord, to draw it along by, will show the force necessary to produce motion. It appears from experiments, that the friction of different combinations of matter differs very considerably, and that an immense quantity of power may be lost in a machine by using those substances for the rubbing parts which have great friction. In a combination where gun-metal moves against steel, the same weight may be moved with a force of 158 pounds, which it would require 22 pounds to move when cast iron moves against steel.

The resistance called friction performs important offices in nature and in works of art. Friction destroys, but never generates motion. Were there no friction, all bodies on the surface of the earth would be clashing against one another; rivers would dash with unbounded velocity, and we should see little besides collision and motion. At present, whenever a body acquires a great velocity, it soon loses it by friction, and all the force is spent in the friction of water against the surfaces it runs over soon reduces the rapid torrent to a gentle stream; the fury of the tempest is lessened by the friction of the air on the face of the earth; and the violence of the ocean is subdued by the attrition of its own waters.

Its offices in the works of art are equally important. Our garments owe their strength to friction; and the strength of ropes, sails, and various

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other things, depends on the same cause; for they are made of short fibres, pressed together by twist- ing; and this pressure causes a sufficient degree of friction, so that the fibres slide one upon another. Without friction, it would be impossible to make a rope of the fibres of hemp, or a sheet of the fibres of flax; neither could the short fibres of cotton have ever been made into such an infinite variety of forms as they have received from the hands of ingenious workers; and, in short, that which makes a brush hold together, forms, in a considerable thousand textures for comfort or for luxury; and all these are constituted of fibres united by friction. In fine, if friction retards the motion of machines, and consumes a large quantity of moving power, we have a full compensation in the numerous and important benefits, which it ensures to us.

Friction, in medicine and surgery; the act of rubbing the surface of the body, whether with the hand only, with the flesh-brush, flannel, or other substances, or with oils, ointments, or other medicinal matters, with a view to the preservation of health, or to the removal of particular diseases. The wholesome effects of fri are well illustrated by the advantages of currying horses. Friction is an efficacious remedy in several conditions of disease, particularly in chronic rheumatism of long standing; in muscular contractions, succeeding to rheumatism, &c., and connected often with effusions of lymph; in some states of paralysis; in certain indolent tumours, &c. In these cases, a variety of unguents and liniments is recommended; but the friction itself is the principal source of relief.

FRIDAY, with the Anglo-Saxons Frigedæy, has its name from the wife of Odin, Frey or Friga. See Northern Mythology.

FRIDAY, Good; the day of our Saviour's crucifi- xion. The Protestants on the continent, consider this day as the most solemn in the whole year; by the Catholics, however, it is celebrated only as a half holyday.

FRIEDEN (German for peace) occurs in many geographical names, as Friedland.

FRIEDLAND; a town and lordship in Bohemia, in the circle of Brounau, with a castle, Wallenstein bought the lordship in 1622, and was created, in the same year, duke of Friedland by the emperor; hence he was called, by the troops, Der Friedländer. The castle contains a portrait of Wallenstein. The town contains 1169 inhabitants.

FRIEDLAND, Battle of; gained by Napoleon, June 14, 1807, over the Russians, under Bennigsen. Although the Russians had repelled the attack of the French army at Heilsberg (June 10), they were obliged to retire, on the following days, towards Friedland. On the 14th, at two o'clock in the morning, the advance guard had a skirmish with a part of the division of Lannes, which covered the road to Königsberg. The contest remained undecided at five o'clock in the morning, when the first divisions of the Russian army arrived, and crossed to the left bank of the Alter by the stone bridge in the town, and two pontoon-bridges above and below it. The Russian army (deducting the detachments) amounted to about 67,000 men (seven divisions). It was drawn up in two bodies, with the alley in the rear. The right wing, consisting of four divisions, and the greatest part of the cavalry, rested on the Alter. The left wing consisted of two divisions, separated from the right by a mill stream, also rested on the Alter; and one division, divided into battalions, was stationed as a reserve upon the right bank of the river. The first body was drawn up with two battalions of each regiment in line, and the third in the rear in column; the other main body was composed of columns of battalions. On the French side, the remainder of the division of Lannes came up in the beginning of the battle; that of Mortier, at seven o'clock in the morning; Napoleon himself, at nine o'clock, with the division of Napoleon (the left division); Ney, under Victor, with the foot-guards, at three o'clock in the afternoon; in all, 75,000 men. From five o'clock in the morning, the battle was continued on the left wing, without any decisive results. Both armies kept their position (Lannes formed the left, Ney the right wing, and the French army); yet the Russian cavalry of both wings made several successful attacks, and the whole line advanced half a league. It would now have been easy for Bennigsen to overpower the division of Lannes (which was only supported by the successive arrival of detachments), to take possession of the wood of Pothhausen and of the road which passes through it, and thus prevent the development of the French forces, and, perhaps, destroy them in detail. But Bennigsen, satisfied with these incon- siderable advantages, allowed himself to be detained by a cannonade and some skirmishes of the light infan- try, and looked on while the enemy continually augmented the numbers of his troops. The French, when the last divisions were in position, immediately commenced a general attack in front, whilst Ney (at six o'clock in the evening) fell upon the left flank of the Russians, with a strong detachment. The Russians were already forced back into their former position, when they opened a bombardment of forty cannon upon the left to the left of Friedland, which soon decided the fate of the day. The havoc which it made in their masses, compelled the Russian left wing to fall back to Friedland, over the Alter. They covered their retreat by setting fire to the suburb. Under these circumstances, it became necessary to relinquish the advantages gained by the right wing, on a general retreat through Friedland was ordered. But some detachments of Ney's division had already taken possession of the town. The Russians, exposed to a heavy cannonade, threw themselves into the burning suburb, and were compelled to fight their way through the enemy. The carnage was dreadful. The divi- sion which covered the retreat found the bridges already destroyed, but succeeded in escaping through a ford. The Russians retreated through Wehlau, to the left bank of the Memel. An armistice was con- cluded on the 21st, which was succeeded by the peace of Tilsit. The Russians had about 7000 killed (among whom were two generals and 12,000 wounded. The French had five generals wounded. Their total loss cannot be ascertained, but was probably much less than that of the enemy. They captured sixteen cannons.

FRIENDLY COVE, or SANTA CRUZ, a har- bour in Nootka Sound, where a settlement was formed in 1788, by Mr Meares and some other Englishmen, for the sake of carrying on the fur trade; lat. 126° 30' W.; lat. 49° 35' N.

FRIENDLY ISLANDS; a cluster of islands in the South Pacific ocean, of great extent, and up- wards of 150 in number; some of which are large, and some lofty, with volcanoes. The most important are the following: Tonga, Eiaooue, Innioouka, Hapae islands, Mavouga islands, Fiihee islands, Vavavo, and Toufoua. Lon. 184° 46' to 185° 45' E.; lat. 19° 40' to 21° 30' S. They are in general fertile and well planted with cocos-nut and bread-fruit trees, and have numerous islands, which are inhabited by good; parrots and parakeets are found, of vari- ous kinds; pigeons, with plenty of wild ducks, and other water-fowl. The inhabitants appointed to cap- tain Cook, who first discovered these islands in 1773, hospitable and kind, and to be united in a firm alli- ance; on which account he gave them the name they bear. But the accounts of subsequent visitors, parti-
curally that of Marinier, show them to be capable of the most furocious cruelty, and to be in the practice of cannibalism. They are a shade darker than copper brown, of common stature, muscular, healthy, cleanly, and some of them handsome. The population is supposed to be about 200,000. The climate is healthy. The inhabitants are active and industrious, and accomplished with neither riches, want, nor oppression. The sea coast abounds with fish, in catching which they are extremely expert, and on their coasts are found great numbers and variety of shell-fish. They are exceedingly fond of iron, and will readily give the produce of the islands in exchange, such as hogs, fowls, fish, yams, bread-fruit, plantains, bananas, sugar-canes, &c. Good water is scarce, or it is generally difficult for navigators to obtain it in sufficient quantity.

FRIENDLY SOCIETIES denote associations, chiefly among the most industrious of the lower and middling class of tradesmen and mechanics, for the purpose of affording each other relief in sickness, and their widows and children some assistance at their death. These societies in Britain have been thought worthy of the protection of the legislature, to prevent frauds, which had arisen from the irregular principles on which many of them were conducted.

FRIENDS. See Quakers.

FRIESLAND; a province in the Netherlands, bounded north by the German ocean, east by Groningen and Overysell, south by Overysell and the Zuyder Zee, and west by the river Frie. Friesland, in its air and soil, resembles Holland, especially in the north-west parts, which lie lower than the sea, and are particularly remarkable for fine pastures, in which, besides excellent oxen, cows, and sheep, a great number of large horses are bred for sale in Germany and other countries. In the more elevated parts is found good corn land. Lewarden is the capital. Square miles, 1152. It is divided into the three following districts:

<table>
<thead>
<tr>
<th>Population</th>
<th>Lewarden</th>
<th>Sneek</th>
<th>Heerenveen</th>
<th>Total</th>
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<tr>
<td></td>
<td>93,720</td>
<td>45,769</td>
<td>37,668</td>
<td>177,157</td>
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FRIESLAND, EAST; a province of Hanover, bounded north by the sea, east by Oldenburg, south by Oldenburg and Meppen, and west by Groningen; about thirty-eight miles from north to south, and thirty-six from east to west. The air is moist and thick, but not nearly so heavy as sea breezes. The spring and harvests are late. The land is flat, low, and defended by strong and lofty dike against the waves of the sea. The land along the coast is rich and fertile, chiefly meadow land, with a few corn fields. The inhabitants are mostly Lutherans, and partly Calvinists. The Catholics have a free toleration in many towns, and the Moravians in Sneek, Leer, and Norden. The principal towns are Aurich, Norden, and Emden. It is divided into twelve districts; square miles, 1113; population, 120,826; houses, 91,675.

FRIEDRICH, in architecture; that part of the entablature of columns between the architrave and cornice. Anciently friezes were enriched with figures of animals; in modern times, they are commonly ornamented by figures of baso relievo.

FRIGATE, in the navy; a light, nimble ship, built for the purpose of sailing swiftly. These vessels mount from twenty to forty-four guns, and sometimes more.

FRIGATE-BIRD. See Albatros.

FRINGE-TREE (chionanthus Virginicus) is a small tree, belonging to the same natural family with the olive, inhabiting America, from latitude 30° in the Gulf of Mexico. It sometimes attains the height of twenty feet, but usually does not exceed eight or ten; the leaves are opposite, oval, and six or seven inches long; the flowers are very numerous, snow-white, disposed in panicked racemes; the corolla is divided into four long linear segments, whence it derives the name of fringe-tree. "The fruit is an oval drupe, containing a single striated nut. This tree is frequently cultivated in gardens as an ornamental plant. Four other species of chionanthus are known, two of which inhabit the West Indies; the third, Ceylon, and the fourth, New Holland.

FRIEDANUS (Frobenius); an old name of the Istavones and Ingulches, which dwelt between the Rhine, the German ocean, and the Ems. They were, at first, allies of the Romans, till the latter attempted to deprive them of their liberty, when the Frisians became dangerous enemies to the Roman colonies. In the fourth and fifth centuries, they appear in the great confederation of the Saxons tribes inhabiting the sea coast from the Scheidt to the Elbe and Eider. We also find them among the Saxons in England. Charlemagne appointed dukes over them, who, at a later period, were succeeded by chiefs from among themselves, who were engaged in continual quarrels. Count Edward, first united the Netherlands, and held it as an imperial fief. The estates of Friesland always retained considerable power. On the death of their last prince, in 1744, Prussia took possession of the country, by virtue of an imperial edict of 1690, but respected the estates. The peace of Tilsit, in 1807, separated it from Prussia, and, in 1814, it was annexed to Hanover. West Friesland, a province of the Netherlands, was formerly a part of this country. Tacitus describes the Frisians as extremely poor, and paying their tribute in furs. They have always been bold seamen, and ardently attached to liberty. Their language is interesting for the student of Anglo-Saxon. There are descendants of the ancient Frisians, on some of the small islands near the western coast of Sleswick, who are characterized by peculiar dress, customs, and language. See Wierch's History of East Friesland, ten vols., coming down to 1816, Aurich, 1792—1816.

FRUITILLAE (Fringillae) are a genus of plants belonging to the natural order Illicineae. The species are herbaceous; the leaves simple, alternate, though sometimes appearing opposite or verticillate; the flowers, terminal and peduncled; the corolla campanulate, of six petals; the stamens six; the style trident, and terminated with three stigmas; the capsule of three cells. About a dozen species are known, several of which are cultivated in gardens, being hardy and highly ornamental plants. The F. imperialis, or crown imperial, so generally a favourite, and supposed to be a native of Persia, differs from the other species in having its large orange-yellow flowers crowned beneath a terminal tuft of leaves.

FROBEN, John (Frobenius); a learned printer, born at Hammelburg, in Franconia, in 1490. After having completed his studies, he went to Basle, and became the corrector of Ameubach's press until 1491, when he established a press of his own. His impressions, which are remarkable for their correctness, were principally of theological works, particularly the fathers. His Greek type is not handsome; his Roman is round and clear, without being pleasing; his title-pages are generally crowded, but the margins are, in many of his decorations, extremely ornate from Colbein. He also printed the second edition of the New Testament of Erasmus (1519) on parchment. He was an intimate friend of Erasmus, who lodged in his house, and had all his works printed at Froben's press. He died in 1527. Erasmus wrote a Greek
and a Latin epitaph on him. His sons, Jerome and John, and his grandsons, Ambrosius and Aurelius, continued his business.

FROBISHER, Sir Martin, an eminent navigator, was born near Doncaster, in Yorkshire. He was brought up to the sea, and, acquiring great skill in navigation, he discovered a north-west passage to the Indies, excited his ambition, and, after many fruitless attempts to induce merchants to favour his project, he was employed, by the ministers and courtiers of queen Elizabeth, to fit out a private adventure, consisting only of two barns of twenty-five tons burden each, and a pinnace of ten tons. In this enterprise he was successful; and his vessel, which ever since has been called by his name, and returned to England with some black ore, which being supposed to contain gold, induced queen Elizabeth to patronize a second voyage, and lend a sloop of the royal navy of 200 tons for the purpose. The delusion was even kept up to a third expedition; but all of them proved fruitless. In 1585, Frobisher accompanied Sir Francis Drake to the West Indies; and, at the defeat of the Spanish armada, he commanded one of the largest ships in the fleet, and was honoured with knighthood for his services. In the years 1590 and 1592, he commanded squadrons against the Spaniards, and took three vessels. In 1594, he is supposed to have led four ships of war to the assistance of Henry IV. of France, against the Spaniards and leaguers, when, in an attack on a fort near Brest, he received a wound, of which he died on his return home.

FROG-FISH; a species of tophiis, deriving its name from a resemblance of the head and mouth to that of a toad or frog. Few fishes have a more hideous appearance than this. The head, which is flat, and furnished with an enormous mouth, constitutes more than a third of the whole animal; the teeth are very numerous, sharp, and movable, and the cavity of the mouth is occupied by a large, fleshy tongue; skin, thin and loose-tuberculated on the back and edges of the jaws; scales, imperceptible; dorsal fins, two; pectorals, large and fleshy, somewhat resembling paws; several moveable rays project from the head, which are moved about in the water, while the fish is fixed beneath the surface of the mud, to decoy small fishes within the scope of its jaws, which are then suddenly opened, and its prey swept into them by the mass of water which rushes into the mouth. The sluggish and inactive habits of the frog-fish are well known; and, indeed, were it not for stratagems similar to the above, the animal could never obtain its nourishment, being quite incapable of exerting sufficient activity to overtake, in pursuit, the fishes which constitute its principal food. Its voracity is proportionate to its inactivity, rendering it very injurious to the fisheries by the multitude of small fry which it devours. The length is very large; the greatest is short. In breadth, the frog-fish seldom exceeds four feet, the breadth being in the proportion of one-third or more. From the pectoral fins, the body decreases very rapidly in diameter towards the tail. Wounds inflicted by the spines are said to be very venomous. The apertures of the gills are surrounded by cartilage. It is abundant in the English Channel, and is particularly common in the Mediterranean Sea, where it is known as the 'brochet.'

FROISSART, John, a French poet and historian, was born in 1337, at Valenciennes. He received a liberal education, being destined for the church, but his inclination for poetry soon appeared, and was accompanied by a great passion for the fair sex, and a fondness for feasts and gallantry; so that in his life and adventures, as well as in his writings, he gives us a true picture of the gay and thoughtless character of his countrymen at that time. At the age of twenty, encouraged by his beloved lord and master, Messire Robert de Namur, he began to write a history of the wars of his time, which occupation, as he took several journeys to examine himself the theatre of the events he was about to relate, served in some measure to make him a person of consequence. He was employed for a lady, young and charming, but far above his rank, with whom he had become intimate, in consequence of reading poetry and romances with her. The marriage of this lady, soon after, made him so unhappy, that he went over to England, where he was received into the order of knighthood by the wife of Edward III., declaring herself his patroness. She afforded him the means of returning to France, where he lived near the object of his passion. Soon after, he returned to the court of England, always open to the gay poet and narrator of chivalric deeds. During that time he visited Scotland, and was entertained by William, earl of Douglas. In 1366, he accompanied the Black Prince to Aquitaine and Bourdeaux, and even wished to follow him in his campaign in Spain, against Henry of Trastamara. He afterwards went with the duke of Clarence to Italy, when this prince was married to the daughter of Galeazzo Visconti, and directed the troops sent by the king of Savoy gave in honour of his master. After the death of his protectress, Philippa, Froissart gave up all connexion with England, and, after many adventures as a diplomatist and soldier (for whose duties, as he says himself, he was very little fitted), he became household chaplain to Wenceslaus, duke of Brabant, who was himself a poet, and of whose verses, united with some of his own, he formed a sort of romance, called Meliador. On the death of Wenceslaus, he entered the service of Guy, count of Blois, who induced him to continue his chronicles; on which account he took a journey to the court of count Gaston Phébus, count of Foix, that he might hear from the mouth of the knights of Béarn and Gascony, at that court, an account of their deeds. On his way, he made acquaintance with Messire Espaing du Lion, a good knight, who had served in all the wars, and who communicated to him all his information with that simplicity and ingenuity which is the part of Froissart's chronicles, founded on these accounts, is one of the best portions of his works, in respect to tone and style. He returned to England, during the reign of Richard II., a son of the Black Prince. After the dethronement of this monarch, he went to Flanders, where he died in 1401. His historical writings, which reach down to 1400, are strongly marked with the characteristic features of his active life. They are precious documents, exhibiting the character and manners of his age. Of all the copies of his historical works, which are found in different libraries, the best and most perfect is that at Breslaw, which is prized so highly, that, when this city surrendered to the French, in 1806, it was expressly stipulated, in the articles of capitulation, that this manuscript should remain in the city. Froissart's poems are also preserved in manuscript, in the royal library at Paris. Of his Chronicles of France, he returned to England; by Thomas Johnson, in 1536, and 1572; by Spence, and by Dryden and Britton, from 1326 to 1400 (continued to 1498 by an anonymous writer), an edition was published at an early period in Paris, in 4 vols. quarto, and was reprinted in 1603, 1614, 1618, and 1650. Other editions have appeared at Paris and at London, and an English translation was published in 1810. There has also been a translation into the Flemish tongue, by G. P. van der Loo. The new edition of the writings of Froissart, begun by Ducor, was interrupted by the revolution.
FRONDE—FROST.

FRONDE, a French party during the minority of Louis XIV., which opposed the court and cardinal Mazarin, whom the queen-mother had appointed prime minister, after the death of Louis XIII. (1648.) The despotism of Richelieu seemed to be continued under the administration of this foreigner, in other forms. The taxes were enormous, and, when the parliament refused to register them, several of the members were put in the Bastile, a freely imprisoned. This excited not only the people, but even the princes of the blood and many noblemen, against Mazarin, who had become immensely rich. At the head of the Fronde stood the cardinal de Retz. (q. v.) The violence and selfishness of the other leaders, who brought the Spanish troops into the country, prevented the Fronde from accomplishing anything for the general welfare. On the contrary, the result of the Fronde served only to strengthen the royal power. The Fronde existed from 1648 to 1654. One who censures the government is still called a Frondeur. See Bachaumont.

FRONDSBERG, George of (Fronsberg, Freundsberg, or Fronsberg), lord of Mindelheim, general of the imperial troops, was born in 1475, and died at Mindelheim, in 1526. He formed his great military talents in the wars of the emperor Maximilian I., against the Swiss. In 1504, he already gained from the defeat of the imperial army. In 1512, he was at the head of the emperor's troops in Italy. He served with equal fame as a general of Maximilian I. and Charles V., and distinguished himself in the battle of Pavia (1525.) He repeatedly led reinforcements to Charles from Germany. In 1526, he raised, at his own expense, by pledging his estates, a body of 12,000 men, with which he strengthened the army of Charles of Bourbon, who thus was enabled to march to Rome, and take the city by storm. He afterwards served in the Netherlands, under Philippert of Orange, in the war against France. He was the author of several improvements in the military system. Frondsberg was a very strong man, and his deeds of personal prowess were celebrated in his time. At the diet of Worms (1521), where Luther appeared to defend himself before Charles V., the calm countenance of the accused, in the midst of enemies, amazed the emperor, which he declared, that tapping him kindly on the shoulder, he said, "My good monk, my good monk, you are about to encounter what neither I, nor any general, in our hardest battles, have ever encountered. If you are sincere, and sure of your cause, go on in God's name, and fear nothing; God will not forsake you."

FRONTIGNAC; a sweet muscatel wine, which is made at Frontignan, in Lower Languedoc, and is carried to Cetde and Montpellier. There are two kinds, the red and white. Epiciures use it with some kinds of fish.

FRONTEMUS, Sextus Julius; a Roman of patrician descent, who flourished in the second half of the first century after Christ. He was thrice consul, and commanded with reputation in Britain, under Vespasian. He was appointed by Nerva to superintend the aqueducts, on which he also wrote. Frontinus died about A. D. 106. He also stood high, in the estimation of his contemporaries, as a jurist. His four books De Stragatismis (Legden, 1751; Leipsic, 1773; and by Wiegemann, Gottingen, 1798), and his work De Aquaductibus Urbis Romae (Pudia, 1792—32; and Alton, 1793), are well known.

FRONTO, Marcus Cornelius; an orator and teacher of eloquence at Rome. He was a native of Crete, and received his education at Cirta, a Roman colony in Numidia. He lived under the emperors Marcus Aurelius, and Lucius Verus, both of whom he instructed in oratory, and the former in ethics. To express his gratitude, Marcus Aurelius erected a column in honour of him, and in his Meditations also makes honourable mention of the instructions he received from him. The writings of Fronto have been compared to those of Cicero. Till lately we had none of his works, except some fragments of a grammatical character, which are found in the collection of Putsch. All the rest were supposed to have been lost, till, in 1815, Angelo Maio, librarian of the Ambrose library, at Milan, found several of his works, and first published them. These were, a book of letters, in Latin, to the emperor Antoninus Pius; two books of letters to the emperor Lucius Verus; letters to his friends; two books of instructions in eloquence, addressed to Marcus Antoninus; some fragments of orations; a long letter of condolence to Marcus Aurelius, on the occasion of his defeat in the Parthian war; two humorous pieces, &c. The first edition of these works, which appeared at Milan in 1815, and is by no means satisfactory, was followed by an impression at Frankfort in 1816, and by a critical edition by Niebuhr in 1816, with illustrations by Buttman and Heidnnd. Between Fronto and Cicero, the distance is too great to permit us, like Maio, to call him Roman eloquence. When Cicero says that he does he deserve the low estimation in which Niebuhr holds him. The most correct view, perhaps, is, that Fronto and Symmachus, like Cicero and Pliny, were the principal orators of their times; the former standing as far below the latter as might be expected from the corrupted taste of the period in which they lived. See Frederic Roth's Observations on the Writings of Fronto and the Period of the Antonines, Nuremburg, 1817.

FROST, is the name we give to that state of our atmosphere in which water is changed into ice. (See Freezing.) The degree of temperature at which this takes place, is called the freezing point. (See Freezing Point.) The cold air draws from water the portion of caloric which is necessary for its existence in a fluid state. The power of frost is immense; a freezing liquid will burst the strongest vessels in which it is enclosed. Organic bodies do not suffer from it, for it cannot reach them unhurt by it. Severe frosts are not so injurious to plants, after dry weather, as when they follow immediately after rain or a thaw. The cause of this probably is, that in damp weather, even in winter, the tender vessels of plants are filled with sap, which, expanding into ice at the time of the frost, breaks them, and thus injures their whole internal organization. From the same cause, the strongest oak split in a severe frost; which is also dangerous, and sometimes fatal to men and animals. It appears wholly to destroy the irritability of the bodily frame, and to stop that of its internal heat. A person feels an irresistible inclination to sleep; he yields, though against his will, and, while lost in insensibility, his limbs begin to stiffen. If a man thus asleep be brought into a warm room, the sudden passage from cold to warmth causes his death; but if be rubbed in the snow he may recover. The same is the case with trees and plants, if the frozen limbs of many animals, which can only be saved by being gradually thawed, especially in snow. Frost is also very injurious to certain kinds of food. All watery fruits are deprived by frost of their pleasant taste and their nourishing properties, and soon grow rotten after being thawed. Even meats, which are well preserved from tainting by the frost, corrupts soon after thawing. Liquids, as beer, for instance, lose their good taste. Violent winds always diminish the
coldness of the air. Many fluids expand by frost, as water, which expands about one-tenth part, for which reason ice floats in water; but others, again, contract, as quicksilver, and thence frozen quicksilver sinks in the fluid metal. Contacted by contact with the atmosphere, naturally proceeds from the external parts of bodies inwards; so, the longer a frost is continued, the thicker the ice becomes upon the water in ponds, and the deeper into the earth is the ground frozen. In about sixteen or seventeen days' frost, Mr. Boyle found it to penetrate fourteen inches into the ground. At Moscow, in a hard season, the frost will penetrate two feet deep into the ground; and Captain James found it penetrated ten feet deep in Charlton island; and the water in the same island was frozen to the depth of six feet. Scheffer assures us, that, in Sweden, the frost pierces two cubits, or Swedish ells, into the earth, and turns what moisture is found there into a whitish substance, like ice, and penetrates standing water to three ells or more. The same author also mentions sudden cracks or rifts in the ice of the lakes of Sweden, nine or ten feet deep, and many leagues long, the rupture being made with a noise not heard of in France, and charged with lightning together. By such means, however, the fishes are furnished with air, so that they are rarely found dead.

The natural history of frosts furnishes very extraordinary results. The trees are often scorched and burnt up, as with the most excessive heat, in consequence of the separation of water from the air, which is therefore very drying. In the great frost in 1683, the trunks of oak, ash, walnut, &c., were miserably split and cleft, so that they might be seen through, and the cracks were often attended with dreadful noises, like the explosion of fire-arms. Philosophical Transactions, No. 105.

The close of the year 1708, and the beginning of 1709, were remarkable, throughout the greater part of Europe, for a severe frost. Doctor Derham says it was the greatest in degree, if not the most universal, in the memory of man; extending through most parts of Europe, though scarcely felt in Scotland or Ireland. In very cold countries, most may be preserved by the frost six or seven months, and proves tolerably good eating. (See captain Middleton's observations made in Hudson's bay, in the Philosophical Transactions, No. 465, sect. 2.) In that climate, the frost seems never out of the ground, it having been found hard frozen in the two summer months. But as soon as set out in the open air, freeze to solid ice in three or four hours. Lakes and standing waters, not above ten or twelve feet deep, are frozen to the ground in winter, and all their fish perish. But in rivers, where the current is strong, the ice does not reach so deep, and the fish are preserved.

Hoar frost is the dew frozen or congealed early in cold mornings; chiefly in autumn.

FRUCTIDOR, 18th (Sept. 4, 1797). On this day the majority of the French directory (see Barras) overthrew the opposite party, Carnot and Barthélemy. Sixty-five deputies (Pichegru, &c.) were condemned to deportation, as guilty of a conspiracy for the destruction of the monarchy; and with them Barthélemy. Carnot escaped. The councils renewed their oath of hatred against royalty on that occasion. See Calendar.

FRUGONI, Carlo Innocenzo, a celebrated and prolific poet, was born at Genoa, in 1692, and was obliged to carry his penury in favour of his two elder brothers, and to embrace the ecclesiastical profession. He entered, in 1707, the congregation of the brothers of Somasqo. The quickness of his genius, and the vivacity of his imagination, enabled him to make rapid progress in the sciences and in belles-lettres. When, in 1716, he began to teach rhetoric at Brescia, he had already attained the reputation of an elegant writer, in prose and verse, both in the Latin and Italian languages. He there founded an Arduinian colony, as it was called, and bore the name of Palmedo, from the palace of Piacen- tico. But it was in Rome that his genius, excited by the grandeur of surrounding objects, and by the example of the poets assembled there, first fully developed itself. He followed especially Rolli and Metastasio. From 1719, he instructed (first at Genoa and then at Turin) a large number of his countrymen in the mysteries of his order. In Modena, he caught the small-pox, and, during his convalescence, finished the Italian translation of the Rhadamansthe of Crebillon. By the patronage of cardinal Bentivoglio, he found an honourable retreat at the court of Parma, but was here obliged to tax his Muse for occasional poems for banquets and other occasions. At the marriage of duke Antonio Farnese, Frugoni made an entire collection of his poems. At the same time, he wrote the Memoirs of the House of Farnese. They appeared in 1729; and the title of royal historian was his recompense. The duke Antonio died. For eight months, his son, the young marquis, celebrated the fulfilment of the general wishes by a series of twenty-five beautiful sonnets, but his prediction was not accomplished. He could win no favour at the new court, and therefore returned to Genoa. His monastic vows now became burdensome to him, and, after much solicitation, he was freed from them by Benedict XIV. His great canonize, on the taking of Oran by the Spanish troops under the command of count Montemar, and other poems which he addressed at the same time to Philip V. and the queen of Spain, met with great success. He was recalled by the court of Parma. The war which had broken out in Italy between Spain and Austria, finished him with the subject of many excellent poems, but often placed him in difficult situations. He had recourse to his talent for burlesque and satiric poetry. He composed a number of poems of this kind, among others the tenth canto of that singular poem, Bertoldo, Rosaura, e Tamsa, upon which twenty poets laboured. After the peace of Aix-la-Chapelle, he returned again to the court of Parma. He now gave himself up more freely to his inclination for poetry. He enriched the Italian theatre with the translation of several French operas, but he had to struggle against the attacks of criticism. He thus lived, until 1768, a life of continual labour. The Italian poets have obtained so great a reputation during their life, or have been equally celebrated after their death. An edition of his works, in nine volumes, was published at Parma in 1779, and a complete edition in fifteen volumes, at Lucca. A selection was published in six volumes at Brescia in 1782. Frugoni's poems are sometimes bombastic, but the greater part of them are rich in excellent thoughts and truly beautiful images.

FRUCTIDOR—FRUITBEARING SOCIETY.

FRUITBEARING SOCIETY, or ORDER OF PALMS; a society founded in 1617, at the castle of Weimar, by Kaspar von Teuteleben, governor of the young prince John Ernest, afterwards Charles Octa- vus, king of Sweden, among its members. It was organized in a great measure like the Italian academies; for example, in order to avoid all disputes about precedence, and to make all the members equal, a name was given to each one, which he was
obliged to use in the society. The German language, although their efforts were in a great measure unsuccessful, yet owes much to them. Some of the words first formed by this society, as, for instance, gegenstand (object), have passed into the language, while others, formed at the same time, as unterscheid (subject), have never come into use. The society continued to 1850, and had always a sovereign for its president. There was a good deal of pedantry attending it.

FRUITFULNESS; the power of abundant production. This power exists in some organic beings in an incredible degree: in a poppy, 32,000 seeds have been counted. The elm produces annually 100,000 seeds. How numerous is the annual production of seeds from fruit-trees, &c! As each of these seeds is capable of becoming an individual of the same sort, if each of them grew up, the whole surface of the earth would soon be covered with these trees. In the lower classes of animals, the fruitfulness is not less great: the queen-bee lays every year 5000 or 6000 eggs. The vast swarms of locusts, which sometimes lay waste immense tracts of cultivated country in Asia and Africa, justify us in attributing to them the greatest fruitfulness.

The smallest herring has 10,000 eggs. A carp which weighs only half a pound, has 100,000, a larger one, 202,280; a perch, 324,640. The spawn of the sturgeon is calculated to contain 7,653,200 eggs. In the cod-fish, the number of eggs is reckoned at 9,344,000. In the higher classes of animals, there is less of fruitfulness; yet even in men, it is greater than the mortality. In the last case, however, much depends upon climate, season, food, habits, manners, temperament, &c.

FRUSTUM, in mathematics; a part of some solid body separated from the rest. The frustum of a cone is the part that remains, when the top is cut off by a plane parallel to the base, and is otherwise called a truncated cone. The frustum of a pyramid is also what remains, after the top is cut off by a plane parallel to its base.

FUCI; a family of cryptogamic plants, inhabiting, exclusively, the ocean, and generally known by the name of sea-weed. The substance of these vegetables is corrosive, membranous, or cartilaginous, hardening slowly, and being sometimes very brittle. They are generally branched, or furnished with fronds, having the form of leaflets, but sometimes simple, or filiform. Their branches are frequently provided with prominent air vesicles; and terminated with pod-like proteronomous, some containing interlaced hairs, and others a gelatinous matter enveloping minute globules which are regarded as the seeds; but the origin and functions of these organs are not well understood; and many fuci are destitute of them. Several species present at certain seasons little tufts of articulated hairs, which, on floating upon the water, adhere to the points on the surface of the fronds. Some fuci are transparent; others thicken; some are bluish brown, with a greenish or reddish tinge; and, although varying so much in form, they may be recognised by a certain family resemblance. Their internal structure is entirely cellular, consisting of cells either rounded or more or less elongated; and nutritive matter, which, when mature, appears on the outer surface: when partially submerged in water, the portion exposed to the air dries up, while the remainder continues to vegetate. Some species are almost microscopic, while others, inhabiting, especially, the South seas, attain the length of several hundred feet. Their duration is not known from the last account, but it is probable they are perennial. Very few, if any, are parasitic, though great numbers of polypus and algae are often attached to them. They are usually fixed by one extremity to rocks, stones, &c., and rocky coasts are frequently covered with them from above low-water mark, as far as the eye can discern the bottom of the ocean. Some, however, are entirely free, and vegetate as well as those which are attached: of this kind is the fucus nitens, which has multiplied prodigiously between the tropics, forming floating masses, that cover extensive portions of the ocean surface so dense as to impede the course of ships, at the same time serving as a retreat for immense numbers of fish, shells, worms, and crustacea, affording an aliment to these various animals, and even to man, though this latter fact is but little known. The natives of New Holland call the F. palmatus, and use it for food; and the same species is eaten both in Scotland and Ireland, either fresh as a salad, or more frequently, after being dried and rolled, it is chewed like tobacco. Some species are highly esteemed in India, and the swellows' nests, so celebrated throughout the East Indies, consist, according to some writers, only of fuci in a state of partial desiccation. On some parts of the coast of Europe, the fuci are cut several times a year, either for manure, or for burning, to obtain the soda contained in their ashes. For this latter purpose, they are dried as quickly as possible, placed in a pit five or six feet deep, containing the richest wicks and kindling, and, when the pit is filled, are set on fire, and the whole is burnt as slowly as possible without producing flame. Besides soda, the ashes of fuci contain iodine.

FUEL. Doctor Black divides fuels into five classes. The first comprehends the fluid inflammable bodies; the second, peat or turf; the third, charcoal of wood; the fourth, pit-coal charred; and the fifth, wood, or pit-coal, in a crude state, and capable of yielding a copious and bright flame. The fluid inflammables are considered as distinct from the solid, on this account, that they are capable of burning upon a wick, and become in this way the most manageable sources of heat; though, on account of their price, they are never employed for producing it in great quantities, and are only used when a gentle degree, or a small quantity of heat, is sufficient. The species which belong to this class are alcohol and different oils. The first of these, alcohol, when pure and free of water, is as convenient and manageable a fuel for procuring heat as anything could be desired. Its flame is perfectly clean, and free from any kind of soot; it can easily be made to burn slower or faster, and to produce less or more heat, by changing the size or number of the wicks upon which it burns; for, as long as these are fed with spirit, in a proper manner, they continue to yield flame of precisely the same strength. The cotton, or other materials, of which the wick is composed, is not scorched or consumed in the least, because the spirit with which it is constantly soaked is incapable of becoming hotter than 174° Fahrenheit, which is considerably below the heat of boiling water. There is only the vapour that arises from it which is hotter, and this, too, only in its outer parts, that are most remote from the wick, and where only the combustion is going on, in consequence of communication and contact with the air. At the same time, as the alcohol is totally volatile, it does not leave any fixed matter, which, when burning, produces smoke; the wick, might render it foul, and fill up its pores. The wick, therefore, continues to imbibe the spirit as freely, after some time, as it did at the first. These are the qualities of alcohol as a fuel. But these qualities belong only to a spirit that is very pure. If it be weak, and contain a certain part of water, it may not burn so fast from the wick as the more spiritual part; and the wick becomes, after some time, so much soaked with water, that it does not imbibe the spirit.
properly. The flame becomes much weaker, or is altogether extinguished. When alcohol is used as a fuel, therefore, it ought to be made as strong, or free from water as possible.

Oil, although fluid like spirit of wine, and capable of being burnt in the furnace, is not so convenient in many respects. It is disposed to emit soot; and this, applying itself to the bottom of the vessel exposed to it, and increasing in thickness, forms, by degrees, a soft and spongy medium, through which heat is not so freely and quickly transmitted. It is true, that this entirely engulfs very sallow wicks, and increasing the number, if necessary, to produce the heat required. Or we may employ one of those lamps, in which a stream of air is allowed to rise through the middle of the flame, or to pass over its surface with such velocity as to produce a more complete inflammation than ordinary. But we shall be as much embarrassed in another way; for the oils commonly used, being capable of assuming a heat greatly above that of boiling water, scorched and burn the wick, and change its texture, so that it does not imbibe the oil so fast as before. Some have attempted a remedy, by making the wick of incom-bustible material, as enamelled; but still, on this plan, the oil does not totally evaporate, but leaves a small quantity of gross, fixed, carbonaceous matter, this, constantly accumulating, clogs the wick to such a degree, that the oil cannot ascend, the flames become weaker, and, in some cases, are entirely extinguished.

There is, however, a difference among the different oils in this respect, some being more totally volatile than others. But the best are troublesome in this way, and the only remedy is, to change the wicks often, though we can hardly do this and be sure of keeping always an equal flame.

The second kind of fuel mentioned, peat, is so spongy, that, compared with the more solid fuels, it is unfit to be employed for producing very strong heats. It is too bulky for this; we cannot put into a furnace, at a time, a quantity that corresponds with the quick consumption that must necessarily go on when the heat is violent. There is, no doubt, a great difference in this respect among different kinds of this fuel; but this is the general character of it. However, when the desire to produce and keep up, by means of cheap fuel, an extremely mild, gentle heat, we can hardly use any thing better than peat. But it is best to have it previously charred, that is, scorched, or burnt to black coal. The advantages great, and the other inconveniences are considerably decreased. When it is prepared for use in that manner, it is capable of being made to burn more slowly and gently, or will bear, without being extinguished altogether, a greater diminution of the quantity of air with which it is supplied, than any other of the solid fuels.

The next fuel in order is the charcoal of wood. This is prepared by piling up billets of wood into a pyramidal heap, with several sparcles, or flues, formed through the pile. Chips and brushwood are put into those below, and the whole is so constructed as to kindle throughout in a very short time. It would burst out into a blaze, and be quickly consumed, if it not, over with earth or clay, beaten close, leaving openings at all the sparcles. These are carefully watched; and whenever the white, watery smoke is observed to be succeeded by thin, blue, and transparent smoke, the hole is immediately stopped; this being the indication of all the watery vapour being gone, and the burning of the true coaly matter commencing. This is a pretty strong red heat raised through the whole mass, and all the volatile matters are dissipated by it, and nothing now remains but the charcoal. The holes being all stopped in succession, as this change of the smoke is observed, the fire goes out for want of air. The pile is now allowed to cool. This requires many days; for, charcoal being a very bad conductor of heat, the pile long remains red hot in the centre, and, if opened in this state, would instantly burn with fury. Small quantities may be procured at any time, by burning wood in close vessels. Little pieces may be very finely prepared, at any time, by plunging the wood into melted and red hot. This kind of fuel is very much used by chemists, and has many good properties, especially in producing watery or other vapours while burning, and, when consumed, leaves few ashes, and those very light. They are, therefore easily blown away, so that the fire continues open, or pervious to the current of air which must pass through it to keep it burning. This sort of fuel, too, is capable of producing as intense a heat as can be obtained by any; but in violent heats it is quickly consumed, and needs to be frequently supplied.

Fossil coals charred, called cinders, or coals, have, in many respects, the same properties as charcoal of wood; as kindling more readily in furnaces than charcoal, and burning more slowly, while remaining watery, or other gross smoke, while they burn. This sort of charcoal is even greatly superior to the other in some properties. It is a much stronger fuel, or contains the combustible matter in greater quantity, or in a more condensed state. It is, therefore, consumed much more slowly on all occasions, and particularly when employed for producing intense melting heats. The only inconveniences that attend it are, that, as it consumes, it leaves much more ashes than the other, and these much heavier too, which are, therefore, liable to collect in such quantity as to obstruct the free passage of air through the fire; and further, that when the heat is very intense, these ashes are disposed to melt or vitrify into a tenacious, discoloured substance, which clogs the grate, the sides of the furnace, and the vessels. This last inconvenience is only troublesome, however, when the heat required is very intense. In ordinary heat, the ashes do not melt, and though they are more copious and heavy than those of charcoal of wood, they seldom choke up the fire considerably, unless the bars of the grate be too close together. This fuel, therefore, is preferable, in most cases, to the charcoal of wood, on account of its burning much longer, or giving much more heat, without being more troublesome. When these qualities, by weight, of pit-coal, wood-charcoal, and wood itself is nearly in the proportion of 5, 4, and 3. The reason why both these kinds of charcoal are preferred, on most occasions, in experimental chemistry, to the crude wood, or fossil coal, from which they are produced, is, that the crude fuels are deprived, by charring, of a considerable quantity of water, and some other volatile principles, which are evaporated during the process of charring, in the form of sooty smoke or flame. These volatile parts, while they remain in the fresh fuel, make it unfit (or less fit) for many purposes in chemistry. For, besides obstructing the vents with which it would require much heat to evaporate them; and therefore the heat of the furnace, in which they are burnt, is much diminished and wasted by every addition of fresh fuel, until the fresh fuel is completely inflamed, and restores the heat to its former strength. But these gases do not exist in the heat of a furnace are quite inconvenient in most chemical processes. In the great number of chemical operations, therefore, it is much more convenient to use charcoal fuel, than the same fuel in its natural state.

It is proper to be on our guard against the de-
gerous nature of the burnt air which arises from charcoal of all kinds. Charcoal burns without visible smoke. The air arising from it appears to be pure and as clear as common air. Hence it is much used by those persons who are studious of neatness and cleanliness in their apartments. But this very circumstance should make us more watchful against its effects, which may prove dangerous, in the highest degree, before we have even the least suspicion of them arising from common crude fuel, is, no doubt, as bad, but the smoke renders it disagreeable before it becomes dangerous. The first sensation is a slight sense of weakness: the limbs seem to require a little attention, to prevent failing. A slight giddiness succeeds, accompanied by a feeling of a flush or glow in the face and neck. Soon after the person becomes drowsy, would sit down, but commonly falls on the floor, insensible of all about him, and breathes strong, snoring as in an apoplexy. If the person is alarmed in time, and escapes into the open air, he is commonly seized with a violent headache, which gradually abates. But when the effect is completed, as above described, death very soon ensues, unless relief be obtained. There is usually a foaming at the mouth, a great flush or suffusion over the face and neck, and every indication of an oppression of the brain, by this accumulation of blood. The most successful treatment is, to take off a quantity of blood immediately, and throw cold water on the head repeatedly. A strong stimulus, such as harishorn, applied to the soles of the feet, has also a very good effect.

The fifth and last kind of fuel is wood, or fossil coals, in their crude state, which it is proper to distinguish from charcoals of the same substances. The difference consists in their giving a copious and bright flame, when plenty of air is admitted to them, in consequence of which they must be considered as fuels very different from charcoal, and adapted to different purposes. (See Flame.) Flaming fuel cannot be managed like the charcoals. If little fire be admitted, it gives no flame, but sooty vapour, and a diminution of heat. And if much air be admitted, to make those vapours break out into flame, the heat is too violent. These flaming fuels, however, have their particular uses, for which the others are far less adapted. When fuel is to be made to burn quickly, it is proper to mix it with a proper quantity of fresh air, by driving it on the subject, and throwing it into whirls and eddies, which mix the air with every part of the hot vapour, gives a most intense heat. This proceeds from the vaporous nature of flame, and the perfect miscibility of it with the air. As the immediate contact and action of the air are necessary to the burning of every combustible body, so the air, when properly applied, acts with far greater advantage on flame than on the solid and fixed inflammable bodies; for when air is admitted in proper proportion to the fuel, the particles of the heat are diffused through the surface, or the particles of them that are outermost; whereas, flame being a vapour or elastic fluid, the air, by proper contrivances, can be intimately mixed with it, and made to act on every part of it, external and internal, at the same time. The great power of this is the consequence of this universal nature, that it not appear when we try small quantities of it, and allow it to burn quietly, because the air is not intimately mixed with it, but acts only on the outside, and the quantity of burning matter in the surface of a small flame is too small to produce much effect. But when flame is produced in large quantity, and is properly mixed and agitated with air, its power to heat bodies is immensely increased. It is therefore peculiarly proper for heating large quantities of matter to a violent degree, especially if the contact of solid fuel with such matter is inconvenient. Flaming fuel is used for this purpose, in many operations performed in large quantities, as the extraction of metallic minerals, in the making of glass, and in the baking or burning of all kinds of earthenware. The potter’s kiln is a cylindrical cavity, filled from the bottom to the top with columns of wares: the only interstices are those that are left between the columns; and the flame, when a sufficient quantity, is a torrent of liquid fire, constantly flowing up through the whole of the interstices, which heats the whole pile in an equal manner. Flaming fuel is also proper in many works or manufactories, in which much fuel is consumed, as in breweries, distilleries, and the like. In such works, it is evidently worth while to contrive the furnaces so, that heat may be obtained from the volatile parts of the fuel, as well as from the fixed; for when this is done, less fuel serves the purpose than would otherwise be necessary. But this is little attended to, or ill understood, in many of those manufactories. It is not uncommon to see vast clouds of black smoke and vapour coming out of their vents. This happens in consequence of their throwing too large a quantity of crude fuel into the furnace at once. The heat is not sufficient to inflame it quickly, and the consequence is a great loss of heat. (See Laboratory.)

The quantity of watery fluid contained in fuel greatly affects the amount of heat it produces; much more, indeed, than is commonly admitted in practice. It is a well known law of chemistry, that the evaporation of liquids, or their conversion into steam, consumes, and renders latent, a greater amount of caloric. When green wood, or wet coals, are added to the fire, they abstract from it, by degrees, a sufficient part of its heat, to convert their own sap or moisture into steam, before they are capable of being burned. And as long as any considerable part of this fluid remains unevaporated, the combustion goes on slowly, the fire is dull, and the heat feeble. Green wood commonly contains a third, or more, of its weight of watery fluid, the quantity varying according to the greater or less porosity of different trees. Nothing is further from true economy than to burn green wood, or wet coal, on the supposition that, because they are more durable, they will in the end prove more cheap. It is true, their price is more, at first, than that of dry; but they produce a given amount of heat, a far greater amount of fuel must be consumed. Wood that is dried under cover is better than wood dried in the open air; being more free from decomposition.

FUENTES, DON PEDRO HERNÁNDEZ DE AZNEVEDO, count of; a general and a statesman, born at Valladolid, 1560. He served his first campaign in Portugal, under the duke of Alva. In 1580, when the duke subjected that kingdom to Philip II., the courage and prudence of Fuentes gained the confidence of the general, who gave him a company of dragoons. He distinguished himself in the military campaigns in the Low Countries under the great Alexander Farnese. He was afterwards sent on important embassies to different courts. He distinguished himself anew under the marquis Spinola, at the taking of Ostend, in 1606. In the reign of Philip III., he was made governor of Madeira, and rendered himself formidable to the Italian prince's republicans, by causing them to feel the superiority of the Spanish power. In 1603, he erected a fortress on a rock at the influx of the Adda into lake Como, on the borders of the Valtenine, called by his name, which was an object of great jealousy to the Grisons. In the war with France, in 1635, he repelled the invasions into Spain, Fuentes again appeared upon the stage. Spain wished to take advantage of the death of
Louis XIII., and the minority of his successor, and, in 1648, sent Fugger, then the eldest of the eight, two, with an army, into Champagne. He laid siege to Rocroy; but the young and brave duke d'Enghien (afterwards the great Condé) attacked the besiegers, May 19, 1643, with inferior forces, and fell, with his cavalry, upon the Spanish infantry, so renowned from the time of Charles V., and till then considered invincible, and destroyed nearly the whole army. Fuentes, severely afflicted with the gout, caused himself to be carried, in a chair, into the midst of the fight, and there fell.

FUGER, James, professor, and member of the imperial academy of the fine arts, was born at Heilbronn, in 1571, where his father was a clergyman. He was extremely fond of drawing, even while at school, and, at the age of eleven, he painted miniatures without assistance. The sight of Andran's battle of Alexander, after Lebrun, the lives of great artists, and his passion for historical reading, determined him to paint historical subjects.

In 1774, he went to Vienna, and was sent as a pensioner to Rome by the empress Maria Theresa. After a diligent study of seven years in that place (from 1775 to 1781), he went, in 1782, to Naples, where the imperial ambassador, count von Lamberg, received him for two years into his house, during which time he obtained an opportunity of showing to the world his extraordinary talents, by three large fresco paintings in the hall of the German library of the queen, at Caserta (although he had never attempted this style before), and by an excellent likeness of the queen. He was, in 1784, appointed vice-director of the school of painting and sculpture at Vienna. Fuger here painted many portraits (including miniatures), and historical pieces. He has left, also, twenty beautiful drawings with crayons and Indian ink, upon blue paper. They were finished by the artist during a long protracted illness. The subjects are from Klopstock's Messiah. Some of them have been engraved for the splendid new edition of this poem, at Leipzig. Leybold has copied them on a larger scale for Frauenholz's edition. One of the last and most beautiful of Fuger's works is his John in the Wilderness, painted for the imperial chapel, in 1804, for which he received 1000 ducats. Fuger died at Vienna, November 5, 1815.

FUGGER, Ulrich, M.L.T. The founder of this family was John Fugger, a weaver in the village of Graben, or Goggingen, not far from Augsburg. His eldest son, John, likewise a weaver, obtained, by marriage, the rights of a citizen of Augsburg, and carried on a linen trade in that city, then an important commercial place. He was one of the twelve weavers who sat in the council, and was one of the Freischaffte of the Westphalian Fem. He died in 1409. His eldest son, Andrew, acquired such great wealth, that he was called the rich Fugger. His line became extinct in 1583. John's second son, James, was the first Fugger who owned a house in Augsburg. He was also a weaver, but carried on a very extensive commerce. Three of his sons, Ulrich, George, and James, extended their business, and laid the foundation for the greatness of their family. They married ladies of noble families, and were raised to the rank of nobles by the emperor Maximilian.

The Fuggers rendered great services to the house of the emperor Maximilian, who was often in want of money, always found them ready to assist him. For 70,000 gold florins, he pledged them to the county of Kirchberg and the lordship of Weissenhorn for ten years, and, on eight weeks' notice, they raised 170,000 ducats for the pope Julius II., who, in connexion with the kings of France and Spain, was then assisting the emperor Maximilian to carry on war against Venice. When the emperor gave up to mining, he farmed the mines of Schwanitz in the Tyrol, and there came to enjoy a very rich. He built the magnificent castle of Fuggergau in the Tyrol, and died in 1503. The emperor Maximilian attended his funeral in person. The Fuggers continued to work these mines, and others in Hungary, Carnia, and Carinthia, and thus obtained great riches. Their good to mining. They farmed the mines of Schwanitz in the Tyrol, and there came to enjoy riches.

The family rose to its highest splendour under the emperor Charles V. Ulrich Fugger's sons had died without heirs; James had left no children, and thus all the wealth and dignities of the whole family had fallen to George, who had two sons, Raimond and Antony. When the emperor Charles V. held the memorable diet of Augsburg (1530), he lived for a year and a day in Antony Fugger's splendid house near the wine market. Antony had free access to the proud Spaniard, since his family often supplied the deficiencies of the imperial coffers, and the emperor relied much upon their assistance, particularly at the time of his expedition to Tunis (1535). The emperor raised him and his brother Raimond to the dignity of counts and baronets. He also invested them with the estates of Kirchberg and Weissenhorn, which had been mortgaged to them, granted them a seat among the counts at the imperial diet, and letters giving them princely privileges. Hardly five years after, he gave them 400,000 florins, paid in silver coins, which they exercised five times (1621, 1622, 1623, 1624, and 1694). This Antony left at his death 6,000,000 gold crowns, besides jewels and other valuable property, and possessions in all parts of Europe and both Indies. It was of him that the emperor rolls in his words, when viewing the royal treasure at Paris, exclaimed, "There is at Augsburg a linen weaver, who could pay as much as this with his own gold."

"This noble family," says the Mirror of Honour, "contained, in five branches (1619), forty-seven counts and countesses, and, including the other members, young and old, about as many persons as the year has days." Even while counts, they continued their commerce; and their wealth became such, that, in ninety-four years, they bought real estate to the amount of 941,000 florins, and in 1762, owned two counties, six lordships, and fifty-seven other estates, besides their houses and lands in and around Augsburg. Their sumptuous and highest dwelling places were held by them, and several princely families thought themselves honoured by their alliance. They had collections of rich treasures of art, and rare books. Painters and musicians were supported, and the arts and sciences were liberally patronised by them. Their houses and their gardens exhibited the masterpieces of the architecture and taste of those times, and they entertained their guests with regal magnificence. When Charles V., after his campaign to Tunis, paid a visit to count Antony, the latter kindled a fire of cinnamon wood, in his hall, with the emperor's bond, given him for an immense sum. While we mention the industry, the prudence, the honours, and the influence of the Fugger family, we must not forget their benevolence, their charity, and their zeal to do good, and to relieve the distressed and needy. We cannot enumerate all the hospitals, schools, and charitable institutions of every kind, which they founded. At the reformation, the family took an active part in favour of the Catholic religion, and contributed much to its support.

The family was divided into two lines, that of Raimond and that of Antony. Each one has been subdivided into several branches, but they all style themselves counts Fugger of Kirchberg and Weissenhorn. The Kirchberg-Weissenhorn branch of the
Raimond line owns the county of Kirchberg and four lordships, with about 14,000 tenants, and 80,000 voters. Generally in a period of this prosperity, the city of Babenhausen, was raised, by the emperor Francis II., August 1, 1803, to the rank of prince of the empire (hereditary in his male heirs), and the imperial lordships of Babenhausen, Boos, and Reitershausen were erected into the principality of Babenhausen. He possessed extensive properties. The seat of Babenhausen, whose capital is the market town of the same name on the Gunz, contains 148 square miles and 11,000 inhabitants, and affords a revenue of 80,000 florins. On the establishment of the confederation of the Rhine (1806), this principality, with the other estates of the family, became a part of the dominions of the king of Bavaria. The owners, however, by express treaty, retained many of their privileges. The territories of the counts and princes of the family, which lie in a great measure scattered, amount in the whole to about 450 square miles, with 40,000 inhabitants.

FUGUE; a term derived from the Latin word *fugā* (a flight), and signifying a composition, either vocal or instrumental, or both, in which one part leads off some determined succession of notes called the subject, which, after being answered in the fifth and eighth by the other parts, is interspersed through the movement, and distinguished amid all the parts in a desultory manner, at the pleasure of the composer; sometimes accompanied by other adventitious matter, and sometimes by itself. There are three distinct descriptions of fugues—the simple fugue, the double fugue, and the counter fugue. The *simple fugue* contains but one subject, is the least elaborate in its construction, and the easiest in its composition. The *double fugue* consists of two subjects, occasionally intermingled, and moving together; and the *counter fugue* is that fugue in which the subjects move in a direction contrary to each other. In all the different species of fugues, the parts fly, or run after each other; and hence the derivation of the general name fugue.

FULA. See Foulah.

FULDA; formerly a bishopric and principality of Germany, in the circle of the Upper Rhine; bounded north by Hesse-Cassel, east by the county of Hesse-Berg, south by the bishopric of Wurzburg, and west by the sea. It was inhabited by the ancient inhabitants of forty miles in length, and from seven to twenty-five in breadth. The country is mountainous and woody, with some rich arable lands, and some salt and medicinal springs. It is well watered. When the secularization of the ecclesiastical principalities of the German empire took place, it was ceded to Orange-Nassau, then to the grand duke of Frankfort. In 1814, it was divided; and a district, containing 27,000 inhabitants, was given to Saxe-Weimar, and the rest to Prussia. Prussia ceded her portion to Hesse-Cassel, which now forms a grand duchy belonging to the latter government. Square miles of the whole duchy, 276; county, 116,000; line of sea, thirty inches in length, and almost one in diameter. Their outside is commonly covered with small prickly tubercles, and often also surrounded by a coat of aggregated quartz grains. The inside is frequently lined with a vitreous fusion. They are transparent, grayish, and the size in which they are found.

They are principally found in the heath of Senne in Westphalia, at Pillau near Königsberg, in the vicinity of Dresden, at Nietleben near Halle on the Saale, at Drigg in Cumberland, and other places. See Fiedler's account in Gilbert's *Annalen der Physik* (Annals of Physics), vol. 55, 61, and 71.

FULLER, Thomas; an eminent historian and divine of the church of England, in the seventeenth century. He was born at Aldwinkle, in Northamptonshire, of which parish his father was minister. He was sent to Queen's college, Cambridge, and greatly signalized himself by his application to study. He removed to Sidney college in the same university; and, being chosen minister of St Bennet's parish, Cambridge, he became very popular as a pulpit orator. In 1631, he obtained a fellowship at Sidney, and was collated to a prebend in the cathedral of Salisbury. The same year he published a poem entitled "David's lamentations," and was appointed to the office of the chaplain to the queen; and to the cure of the parish of Gunstree, to which was added the office of the priest of Leigh. After this, he was appointed to the curacy of the parish of Great Wiltshire. In 1636, he removed to Oxford, where he soon rose into a high position. In 1639, he published his "History of the Holy War," which was his first production. His History of the Holy War first appeared in 1640, soon after the publication of which he removed to London, and was chosen lecturer at the Savoy church in the Strand. He was a member of the convocation which met in 1640, and was one of the select committee appointed to draw up new canons for the better government of the church. About this period, he published his *History of the Old and New Testament* (folio). In 1643, he went to Oxford, and joined the king, became chaplain to Sir Ralph Hopton, and employed his leisure in making collections relative to English history and antiquities. In 1646, he was permitted, by Sir T. Fairfax, to go to London. In 1650, he published a *Pigash Sight of Palestine and the Confinse thereof, with the History of the Old and New Testament* (folio), with maps and views; and in 1650 appeared his Abel Redivivus, consisting of lives of religious reformers, martyrs, divines, &c. In 1656, he published *The History of the Birth of Jesus Christ to the year 1648;* to which was subjoined his History of the University of Cambridge, since the Conquest, and the History of Waltham Abbey. In 1658, the living of Cranford, in Middlesex, was bestowed on him, and he removed thither. The restoration taking place in 1660, he was reinstated in his prebend of Salisbury. His death took place August 15, 1661. The year after his death was published his principal literary work, the *Worthies of England* (folio)—a production valuable alike for the solid information it affords relative to the provincial history of the country, and for the fusion of historical and moral reflection, and for the observation on men and manners. The great fault of this, as well as of the former compositions of doctor Fuller, is an elaborate display of quaint conceit, owing, perhaps, more to the natural disposition of the author than to the taste of the age in which he wrote, when, however, originality of wit was not in value. Among the many marvellous stories told by doctor Fuller's powers of memory, it is said that he could repeat 500 strange and unconnected words after twice hearing them, and recite a sermon *verbatim,* after he had heard it once. His Worthies appeared in a new edition, with his life prefixed, in 1812 (2 vols. 4to.)

FULGURITE is the same given to those conglomerations of grains of quartz half-melted together by lightning, and of a cylindrical form; which are sometimes found in small sandy hollows. They are generally in a perfect globular shape, and sometimes three inches in length, and almost one in diameter. Their outside is commonly covered with small prickly protuberances, and often also surrounded by a coat of aggregated quartz grains. The inside is frequently lined with a vitreous fusion. They are transparent, grayish, and the size in which they are found.

They are principally found in the heath of Senne in Westphalia, at Pillau near Königsberg, in the vicinity of Dresden, at Nietleben near Halle on the Saale, at Drigg in Cumberland, and other places. See Fiedler's account in Gilbert's *Annalen der Physik* (Annals of Physics), vol. 55, 61, and 71.
FULLER'S EARTH: a well-known mineral, generally of a greenish white colour, more or less mixed with brown, gray, or yellow; of a soft and friable texture, and somewhat unctuous to the touch. It consists chiefly of silex, alumine, and water. When thrown into water, it immediately absorbs it, and breaks down into a fine pulp. Its utility in removing grease from woolen and other fabrics, has given this earth a great value in commerce. There are very extensive beds of this earth in several counties in England, as Kent, Surrey, Sussex, and at Wavendon, near Woburn in Bedfordshire. We have noticed the valuable property of this earth of taking grease out of woolen and other cloth, and, as the spindle, wainscots, mingled, parts combinations, cause coal, of large friable mixed, which, on a large scale, is effected by the operation called fulling, whence its name has been derived. This, which is performed by a kind of water-mill, called a fulling-mill, is particularly necessary with respect to new cloths, for the purpose of depriving them of the grease and oil which have been used in their preparation, and thus enables their fibres to curl and interlace during the fulling. The cleansing property of this earth depends entirely on its alumine, which readily absorbs the grease. The properties of good fuller's earth are, a susceptibility of being diffused through water without forming a paste, and a great degree of fineness, as the particles of silex would otherwise clot. As an article of general utility, it might be more frequently used than it is for the cleaning and scouring of wooden floors and wainscots. In this respect, it might be rendered an excellent substitute for soap.  

FULLING; the act of cleansing, scouring, and pressing stuffs, cloths, stockings, &c., to render them stronger, firmer, and closer; called also milting, because these cloths are in fact secured by a water-mill. The principal parts of a fulling-mill are the wheel, with its trindle, which gives motion to the toe or spindle, whose teeth communicate that motion to the pestles or stampers, which fall into troughs, wherein the cloth is put, fuller's earth, to be secured and thickened by this process of beating it.  

FULMINATING; an excommunication. See Excommunication.  

FULMINATION. In a variety of chemical combinations, it happens that one or more of the principles assume the ionic state with such rapidity that the particles of air produce an electrical effect. This is called fulmination, or, more frequently, detonation. Fulminating gold, fulminating silver, fulminating mercury, and gunpowder, are the most familiar substances of this kind. (For an account of them see Gold, Silver, Mercury, and Gunpowder.) The fulminating powder is made by triturating, in a warm mortar, three parts, by weight, of nitre, two of carbonate of potash, and one of flowers of sulphur. A few grains of this composition fused in a ladle, and set on fire, explode, with a very deafening noise, leaving an impression upon the ladle as if it had received a blow downwards. Three parts of chloride of potash and one of sulphur, separately reduced to powder, and afterwards intimately mingled, on being triturated in a metal mortar, cause numerous successive detonations, like the cracks of a whip, or the reports of pistols, according to the rapidity and force of the pressure employed. Six parts of chloride of potash and one of sulphur, can escape ignition. But the combination of the sulphuric acid, detonate by the same means, but more strongly, and accompanied by a red flame. All detonating mixtures explode with still greater violence if previously wrapped up in a double paper.  

FULMINIC ACID; a peculiar acid, known only in gaseous combination with certain metallic oxides, and first discovered with those of mercury and silver, with which it forms powerfully detonating compounds. The conditions necessary for forming these compounds are, that the silver or mercury be dissolved in a fluid which contains so much free nitric acid and alcohol, that, on the application of heat, nitric ether shall be freely disengaged. According to an analysis of fulminate of silver made by M. Gay-Lussac and Liebig, the acid of the salt is composed of twenty-six parts, or one atom, of cyanogen, and eight parts, or one atom, of oxygen. It is therefore to be considered a true cyanic acid, and its salts may, with propriety, be termed cyanates; and this notwithstanding it differs in so many respects from the cyanic acid of Wohler (for an account of which, see Prussic Acid).  

FULMINATING; fulminating silver, and Mercury, for fulminating mercury.  

FULTON, Ronkart, an American engineer, who, although not the inventor of steam-boats, was the first who brought them into practical use, was born in Little Britain, in Pennsylvania, in 1765. In his infancy, he was put to school in Lancaster (Pennsylvania), where he acquired the rudiments of a common English education. His peculiar genius manifested itself at a very early age. In his childhood, all his hours of recreation were passed in the shops of mechanics, or in the employment of his pencil. At the age of seventeen years, he painted portraits and landscapes, in Philadelphia, where he remained till he was twenty-one years of age. This year, he went to England, and was received with great kindness by his distinguished countryman, Mr West, who was so pleased with his promising genius and amiable qualities, that he took him into his house, where he continued an inmate for several years. After leaving the family of West, he appears for some time to have made painting his chief employment. He spent two years in Devonshire, where he formed an acquaintance with the duke of Bridgewater, (who was early in correspondence with Mr Symington for introducing steam-navigation into his canals) and lord Stanhope, a nobleman celebrated for his love of science, and particularly for his attachment to the mechanic arts. In 1793, we find Mr Fulton actively engaged in a project to improve inland navigation. In May, 1794, he obtained from the British government a patent for a double inclined plane, to be used for transportation; and, in the same year, he submitted to the British society for the promotion of arts a memoir on his invention of mills for sawing marble, for which he received the thanks of the society and an honorary medal. He also obtained patents for machines for splicing flax and making ropes, and invented a mechanical contrivance for scooping out the earth, in certain situations, to form the channels for canals or aqueducts. The subject of canals appears chiefly to have engaged his attention about this time. He now, and probably for some time previously, professed himself a civil engineer. Under this title, he published his work on canals. Throughout his course as a mechanist and civil engineer, he derived great advantage from his patent for drawing any perfect straight line. He was an elegant and accurate draftsman. After his attention was directed to mechanics, he seems not to have used his pencil as a painter, till a short time before his death, when he painted some portraits of his own family.  

In 1797, he went to Paris, where he studied the higher matters of mathematics, physics, chemistry, and perspective. While there, he projected the first panorama that was exhibited in Paris. He also made an experiment there, in 1797, on the Seine, with a machine designed to propel carasses of gunpowder under water to a given point, and there to explode them. Although this project failed, he continued to employ his attention on the subject, until he had perfected the plan
for his submarine boat, as it was afterwards executed. He returned to America in 1806, and built under Mr Fulton's connexion with the practical establishment of navigation by steam. The real inventors of the steam-boat were Mr Millar of Dalswinton, and the tutor of his family, Mr James Taylor. (See Taylor, James.) The former was the first to suggest the application of paddles which the tumbling of vessels, and the latter, to suggest the employment of steam as the moving-power of these wheels. So far back as the year 1788, they constructed a boat on this principle, the engine of which was made by Mr Symington, then a young engineer in Edinburgh. Experiments were made with this boat on the lake of Dalswinton, Dumfries-shire, which proved highly satisfactory, the vessel being driven at the rate of five miles an hour. In the Scots Magazine, for November, 1788, p. 506, we find the following account of these experiments:—"On Oct. 14, a boat was put in motion by a steam engine, upon Mr Millar of Dalswinton's piece of water at that place. That gentleman's improvements in naval affairs are well known to the public. For some time past, his attention has been turned to the application of the steam-engine to the purposes of navigation. He has now accomplished, and evidently shown to the public, the practicability of this, by executing it upon a small scale. A vessel, twenty-five feet long and seven broad, was the above-mentioned, driven with two wheels by a small engine. It answered Mr Millar's expectations fully, and afforded great pleasure to the spectators. The success of this experiment is no small accession to the public. Its utility in canals, and all inland navigation, points it out to be of the greatest advantage, not only to this island, but to many other nations of the world. The engine used is Mr Symington's new patent engine."—The same gentleman, in the following year, constructed, at the Cannar foundry, a larger vessel, which was tried on the Forth and Clyde canal in November and December, 1789, and went at the rate of seven miles an hour. An account of various experiments made with this vessel will be found in the Edinburgh newspapers for February, 1790. Soon after this, a misunderstanding arose between Messrs Millar and Taylor, and the prosecution of the invention was by them for some time neglected; but in 1801, Mr Benard, a sailor, and Mr Francis, an engineer, at Dalmuir, Scotland, did not abandon the project. Having commenced business at Falkirk, in 1801, built another experimental steam vessel, which was also tried with success on the Forth and Clyde canal, but was interdicted by the canal company, on account of its motion destroying the banks. This vessel, which lay at Locke Sixteen, was inspected by Mr Fulton, accompanied by Mr Henry Bell of Glasgow, when on a visit to the Cannor works; and the consequence was, that, in 1807, Mr Fulton launched a steam vessel on the Hudson, and, in 1812, Mr Bell another upon the Clyde, being respectively the first vessels of the kind put in practice in the United States and old hemispheres. Before, however, carrying the discovery to America, Mr Fulton, in company with Robert R. Livingston, American minister to France, made several experiments on the subject. After some trials on a small scale, they built a boat upon the Hudson, 150 feet long, which was successful. On Mr Fulton's arrival at New York, in 1806, they immediately engaged in building a boat of what was then deemed very considerable dimensions. This boat began to navigate the Hudson river in 1807; its progress through the water was at the rate of five miles an hour. In 1810, Mr Fulton took out his first patent for navigation by steam; and, February 9, 1811, he obtained a second patent for some improvements in his boats and machinery. In 1811 and 1812, two steam-boats were built under Mr Fulton's direction as ferry-boats for crossing the Hudson river, and soon after, one of the same description for the East river. Of the former Mr Fulton wrote and published a description, in the American Medical and Philosophical Register, for October, 1812. These boats were what are called private boats; that is, they were not united by a deck or bridge; sharp at both ends, and moving equally well with either end foremost; so that they cross and recross without losing any time in turning. He contrived, with great ingenuity, floating docks for the reception of these boats, and a means by which they are brought to them without a shock.

We have not space for the details of Fulton's connexion with the project of the grand Erie canal; of his new plans and experiments relative to submarine warfare; of the construction of the steam-frigate which bore his name; of the modifications of his submarine boat; of his vexatious and ruinous law-suits, and controversies with those who interfered with his patent-rights and exclusive grants. For these, we must refer the reader to the valuable Life of Robert Fulton, by Cadwallader D. Colden.

Mr Fulton died February 24, 1815. In person, he was about six feet high, slender, but robustly proportioned, with large dark eyes and a projecting brow. His manners were easy and unaffected. His temper was mild and his disposition lively. He was fond of society. He expressed himself with energy, fluency, and correctness, and, as he owed more to experience and reflection than to books, his sentiments were often interesting from their originality. In all his domestic and social relations, he was zealous, kind, generous, liberal, and affectionate. He knew of no use for money but as it was subservient to charity, hospitality, and the sciences. But what was most conspicuous in his character, was his calm constancy, his industry, and that indefatigable patience and perseverance, which always enabled him to overcome difficulties.

FULVIA; the ambitious wife of Mark Antony. See Antony.

FUMIGATION; means employed for the destruction of minerals, or effluvia. The most efficient of this purifying substance is sulfuric or muriatic acid. Next to it, the vapour of nitric acid, and lastly that of muriatic acid. The fumes of heated vinegar, burning sulfur, or the smoke of exploded gunpowder, deserve but little attention as antimonialics.

FUNCHAL, or FUNCHAL; a sea-port, and capital of the island of Madeira, lon. 17° 4' W.; lat. 32° 38' N.; population, 15,000; houses, 2000; bishop's see. The harbour is defended by several batteries and a castle. It contains six parishes, one cathedral, and seven other churches, four convents, and three hospitals. The streets are narrow, winding and dirty, and the city is irregularly built. Some of the houses are neat, and the windows sashed with lath-work, but with openings wide enough for those within to see and be seen. The principal trade of the inhabitants consists in wine, which the British residents ship to Britain and India.

FUNCTIONS considered in regard to the actions of the body, are by physicians divided into vital, animal, and natural. The vital functions are those necessary to life, and without which the individual cannot subsist; as the motion of the heart, lungs, &c. The natural functions are those which the body cannot subsist any considerable time without; as the digestion of the food, and its conversion into blood. Animal functions include the senses of touching, tasting, seeing, &c., and the voluntary motions.
Function, in mathematics. A quantity is said to be a function of another quantity, when its value depends on that quantity and known quantities only; and it is said to be a function of several quantities, when its value depends on those quantities and known quantities only.

FUNDAMENTAL NOTE; in music; the principal note in a song, or composition, to which all the rest are adapted: it is called the key to the song.

FUNDING SYSTEM; the manner in which modern governments have sought to give security to public loans, and thereby strengthen the public credit. It was first used in America, and afterwards followed by all the other states which paid attention to their credit. It provides that, on the creation of a public loan, funds shall immediately be formed, and secured by law, for the payment of the interest until the state redeems the whole, and also for the gradual redemption of the capital itself. This gradual redeeming of the capital is called the sinking of the debt, and the fund appropriated for this purpose is called the sinking fund. (q. v.)

FUNDS. See Loan, Sinking Fund, Stocks, Public Stocks, and National Debt.

FUNDS, Public; the name given in England to all other public securities, whether stocks, bonds, or other public promissory notes, which are destined for the discharge of the interest, or capital of the national debt. The government, resorting to the expedient of borrowing considerable sums for the public service, assigned to those who made the loans the income of some branch of the revenues of the state, which was deemed sufficient for the paying off of the interest or the capital, or both, according to the contract made between the government and the capitalists. Thus every loan had its funds. In order, however, to avoid the inconveniences which arose from the circumstance, that sometimes a single fund was not sufficient for the discharge of the sums for which it was destined, while another one afforded a surplus, several funds were united, and from the common amount the payments made, for which they had been appropriated. In this manner the Aggregate Fund originated in 1715, the South Sea Fund in 1716, the General Fund in 1716; the Sinking Fund, into which the surplus of the three beforementioned funds flowed. They were originally destined for the diminution of the national debt, but in latter years has also been applied to meet the necessities of government; finally the Consolidated Fund, under which appellation, in the year 1786 (all the beforementioned funds being then abolished), the whole amount of the public revenues (with the exception of the annual grants) became united. The interest of the whole public debt, as well as the capitals, the payment of which is due, also the interest of the bills of the exchequer, the civil list, the pensions, salaries, and several other annual expenditures, are all paid out of this fund. The surplus is annually assigned by the parliament, for the necessary expenses of the ensuing year. Every obligation of the public treasury for the payment of interest or capital, is assigned to a certain fund, the holder of government securities for a certain amount is said to have such an amount in the funds, and the expression "£1000 in the public funds" means a capital of £1000, which, according to the original conditions made at the time of the loan, brings a certain annual interest payable by the state. The public debts, for which certain interests are paid until the time when the capital itself is to be discharged, are called, in the language of the financier, redeemable; and, in common language, funds or stocks. A small part of the public debt consists of annuities for a certain number of years, which cease as soon as the term has expired. They are called irredeemable or determinate annuities; and are divided into long annuities, such as last for a period of ninety or 100 years (in the time of king William III., they brought ten, twelve, and fourteen per cent. above par; those which have not yet ceased, will all expire in the year 1860), and short annuities, which, in 1778, were granted for terms of ten years, at most the latter, as a demarcation to those persons who had suffered losses on the redeemable annuities. Besides those, there are also life annuities, which last until the death of one or several persons. By far the greater part of annuities are perpetual, which differ according to the interest they bear. In the one, however, as the government makes a new loan, it is thrown into that part of the public debt which pays equal interest, and the funds destined for the payment of the interest of the new loan are joined to the fund, out of which the interest of the older capitals is paid. In this manner, the old and new debts are consolidated, and all the interest is paid out of the whole amount of the fund. The business which is daily transacted in these different funds, particularly in the consolidated three per cent., of which the far greater part of the public debt consists, is enormous. It is yet augmented by stock-jobbing—a kind of traffic consisting in listing, which two several contracts, which have not been paid a certain sum, so that, after a fixed period has expired, not the capital, but only the sum, to which the difference of the value of the stock on the day of the contract's expiring, and that on which it was entered into, amounts, must be paid. Although this traffic is prohibited by the laws, and the honour of the parties is the only pledge for the fulfillment of their engagements, yet the business transacted in this way is very considerable. See Public Stocks, National Debt, &c.

FUNDS, National Debt, &c. See Loan, Sinking Fund, Stocks, Public Stocks, and National Debt.

FUNDS, Real; property that is in the hands of the state, and which is not alienated or mortgaged for the payment of the public debt.

FUNDS, SECURED; common stock, when the stockholders have not a clear right to the dividends that are disbursed in the manner of a mortgage loan, and which are secured in the event of the failure of the mortgage corporation. The stockholders are entitled to the dividends that are disbursed on a mortgage loan, and which are secured in the event of the failure of the mortgage corporation. The stockholders are entitled to the dividends that are disbursed on the face of the mortgage, which is secured in the event of the failure of the mortgage corporation. The stockholders are entitled to the dividends that are disbursed on the face of the mortgage, which is secured in the event of the failure of the mortgage corporation.

FUNDY, BAY OF; a bay of North America, between New Brunswick and Nova Scotia, extending about 200 miles in a N. E. direction. It is twelve leagues across from St John's, N. B., to the gut of Annapolis, N. S. Here the tides rise thirty feet. In the basin of Minus, the eastern arm of the bay, the tides rise forty feet; and at the head of the north-eastern arm, called Chignecto channel, they rise sixty feet. These tides are so rapid as to overtake animals that are swimming up the river. See Bay of Fundy.

FUNEN, or FYEN; an island of Denmark, at the entrance of the Baltic, nearly of an oval form, with some irregularities, extending from N. to S. about thirty-five miles, and from E. to W. about thirty; population, 112,000; square miles, 1189. It is a fertile and pleasant island. Most of the inhabitants have seats here. The soil yields great crops of corn, so that nearly 100,000 barrels are exported annually to Norway and Sweden, exclusive of the consumption at home. The inhabitants keep a great number of bees, and, with the honey produced, make mead, which forms a considerable article of trade, being sent to every part of the kingdom. Odense is the capital. Lon. 9° 40' to 10° 30' E.; lat. 55° 2' to 55° 35' N.

FUNERAL RITES. Religious dogmas combine with physical circumstances to decide the character of the last tribute of friendship and love paid to the remains of a good man; nor is it always easy to determine which of these causes may have led one nation to preserve the corpse by an artificial and expensive process, another to reduce it to dust at once to its original elements, and others to leave it in the earth at the disposition of nature. On the other hand, we find the instinct of man, however cruel, absurd, and revolting practices, which have prevailed in some countries, and their milder and better influences in the touching yet consoling usages of others. We must content ourselves here with a brief notice
of the funeral ceremonies of some nations most distinguished in history.

A minute account of the funeral rites of the Hindoos is given in the seventh volume of the Asiatic Researches, with the description of the form of a suttee. The corpse is perfumed, and adorned with flowers; it is then burnt; after many ceremonies, the bones are deposited in a casket and buried, but afterwards disinterred, and thrown into the Ganges. A second service of obsequies concludes after the period of mourning has expired, and this is followed by commemorative rites. The voluntary immolation of the widow of the deceased is the most remarkable part of the ceremony. See Suttee.

The Mohammedans bury their dead. The interment takes place as soon as possible, in obedience to the command of the prophet: “Make haste to bury the dead, that, if he have done well, he may go forth with into blessedness, if evil, into hell-fire.” No signs of excessive grief, no tears nor lamentations are allowed, as it is the duty of a good Mussulman to accept and be satisfied with what has been given. On arriving at the burial place, the body is committed to the earth, with the face turned towards Mecca. Monuments are forbidden by the law, but they are constantly erected. See D’Ohsson, Tableau de l’Emp. Ottoman, ii. 18th; and Chardin, Voyages en Perse, vi. and vii. volumes.

The Egyptians, it is well known, embalm their dead. An account of their mode of sepulture may be found in the articles Cemetery and Mummies.

Among the Jews, the next of kin closed the eyes of the deceased; the corpse was then washed and embalmed (the remains of Jacob lay thirty days in urine, and during forty were anointed with gums and spices, Gen. i. 3.), swathed in linen bandages, and deposited in the tomb. The mourning customs of the Jews may be collected from various passages of the Scriptures. They went bareheaded and barefoot, covered their mouths and kept silence, put on sackcloth and gashed their bodies; funeral songs were sung by persons hired for the purpose. Splendid monuments were sometimes hewn out of the solid rock, with numerous niches: as each niche was filled, its entrance was stopped up by a large stone rolled against it. The process of embalming, as practised by the Egyptians, may have been intended merely as a safeguard against infection.

In the religious creed of the Greeks and Romans, sepulture was an act of piety to the dead; without it, the spirit must wander a hundred years on the banks of the gloomy Styx. The last breath was generally caught by a near relative, who opened his mouth to receive it; the body was washed, and crowned with flowers, a cake of flour and honey placed in the hand, as a bribe for Cerberus, and an obolus in the mouth, as a fee for Charon. Interment and burning were practised indifferently. In interment, the body was placed with the face upward, and the head towards the west. In burning, the pile varied in form and materials: it was lighted by the nearest relative; perfumes and wine were poured on it, and the richest clothes of the dead were buried with him. The ashes were then collected and deposited in a receptacle, which applies to the Greeks and Romans, whose rites were about as far removed from each other as the principles of the two most celebrated systems of law in the world. Intimation was the original practice of the Romans; nor did burning become common till the end of the republic. The practice of burning by night explains the origin of the word funeral (funus, from Finessus, the place at which the dead were buried) at the funerals of distinguished men, both in Greece and Rome, and funeral games were exhibited, in honour of the dead. Burning was not disused till the close of the fourth century. Macrobius (vii. 7) speaks of it as already antiquated in his time.

In the Roman Catholic church, the body is washed immediately after death, a crucifix is placed in the hands, and a wafer and wine are fed to it, with which the visitants sprinkle it. The ecclesiastics remain with it till the interment, offering up prayers. When the time of burial arrives, the priest bearing the crucifix stands at the head, and the officiating priest at the foot, of the coffin. The minister sprinkles the coffin three times with holy water, and the Dies irae and Missa Requiem are chanted. The body is carried to the church, during which time psalms are chanted, especially the Missa Requiem, and, at the close of each, a requiem. In the church, the office of the dead is performed, and the mass is celebrated. In conclusion, the body is thrice censed and sprinkled with holy water. At the grave, a prayer and benediction are pronounced, and the body and grave are thrice censed and sprinkled with holy water. The anthem Ego sum Resurrectio then commences, during which the body is again thrice sprinkled. A prayer, followed by an anthem, is chanted in the church. The Dies irae, Missa Requiem, and Dies irae, succeeds; and the body, with the feet towards the east, is lowered into the grave, each of the mourners, before it is covered, sprinkling it in turn. The dead are commemorated on the third, seventh, and twentieth day after interment, and on their anniversaries.

The wake, or watching, is celebrated in some parts of Great Britain; particularly in the Highlands of Scotland. Burial feasts, or arvels, are still given on the day of interment. An instance of this kind occurred in 1828, at the funeral of Mac Mlec Allister, Glengarry, chief of the Macallumhs, who, 150 geniemen sat down to dinner, and 1500 attendants were regaled with bread and cheese and whiskey. In North Wales, the wael ab is kept with solemnity. The friends bring a pic-nic supper, and pass the night before the funeral in singing psalms and reading the Scriptures. In Ireland, the wake of the lower classes is a scene of tumult and drunkenness. The sullation has often been described. The law requiring that a corpse should be buried in none but woollen stuff, was repealed in the reign of George III.

FUNES, GREGORIO; a patriot of La Plata, extensively known by his Examen de la Historia civil de los Paraguay, Buenos Ayres, y Tucumán published at Buenos Ayres, in 1817, in 3 vols. Doctor Funes was then dean of the cathedral church of Cordova, and has been actively engaged in the cause of the revolution, from its commencement. He became member of a junta, assembled at Cordova, which, under the instigation of Liniers, resisted the progress of the revolution, notwithstanding the opposition of the dean to the views of a majority of his colleagues. In 1810, he was sent, as a deputy from Cordova, to the congress at Buenos Ayres, and, on various occasions between that and the present time, has been prominent in the political affairs of his country. His brother, D. Antonio Funes, has acted a still more distinguished part, having lost a large fortune and two promising sons in the contest, and signalized himself as governor of Cordova. Doctor Funes appears as chairman of the committee of congress on constitutional affairs, which, in June, 1823, procured the adoption of the central form of government for the republic. This report is elaborate and specious, and exhibits a plausible, if not a conclusive view of that side of the question which it advocates. Doctor Funes died in Buenos Ayres, on the 11th of February, 1829. His Essay on the History of Paraguay, Buenos Ayres, and Tucuman, is a valuable work, compiled from the best materials, including many unpublished

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manuscripts, and adds greatly to our stock of informa-
tion on the subject of which treats.

FUNKIRCHEN, or FIVE CHURCHES, or 
PETs; a royal free town and bishop's see in Hun-
gary, capital of Baranya, between the Drave and the 
Danube; 100 miles s. by W. Pest, 140 W. N. 
W. Belgrade, 175 S. S. E. Vienna; lon. 18° 49' 
E.; lat. 47° 20'; pop. 14,847. It is situated on 
as the ascent of a limestone ridge in a district fertile, 
especially in wine, is moderately well built, and has 
an imposing aspect. It contains a fine cathedral, 
seven churches, several monasteries, a public library 
of upwards of 20,000 vols., a military and a civil 
academy, and two hospitals. Each of the churches 
and monasteries has two or more steeples. It is the 
most considerable trading town in this part of Hun-
gary, and is noted for its tobacco, and for the wine 
and cattle sold at its markets. A university was 
 founded here in 1614, by Louis I., at one period con-
taining upwards of 2000 students, but was destroyed 
after the battle of Mohacs, in 1566, and not after-
wards re-established. The Jesuits founded a college 
here in 1614, which grew into much repute.

FUNG1; an extensive family of plants, belonging to the Linnean class cryptogamia. Many of the 
species are commonly called mushrooms. These 
plants vary greatly in size, form, colour, and consis-
tence. They may consist of a solid cylindrical head, 
or are filamentous, membranaceous, tuberous, froth-
like, &c. They are found of all colours, except 
green, but their prevailing hue is greyish-white, or 
yellowish. Their consistence is coriaceous, fleshy, 
spongy, gelatinous, corky or ligneous, but never 
heterogeneous. They are destitute of leaves or flowers, 
and differ much in their appearance from other 
plants. Their anatomical structure, when examined 
with the microscope, is found to consist entirely of 
cells, some rounded, and others more or less elongated. 
When arrived at maturity, they all present certain 
mute coloured globules, which are considered re-
productive, and analogous to the seeds of other 
vegetables. The situation of these globules is differ-
ent in the different genera; sometimes internal, as 
in the truffle and puff-ball, or covering the entire sur-
face, in lamine on the inferior surface, at the opening 
of tubes, in furrows, capsules, or upon particular 
parts of the stem, or on the surface of the head, or floating 
in meagre matter. The abundance of these 
globules in some fungi is incalculable: 2400 species 
of fungi are now known, which are distributed in 
about eighty genera. No other vegetables grow and 
develop themselves so quickly as fungi. It is not 
usual to see hundreds of them, which have sprung 
up in the course of a single night. It is well known 
how rapidly mould, which is a fungus, covers cer-
tain substances; some species in a few minutes pass 
through the whole course of their existence; others 
live only a few hours, but their duration is generally 
several days, and even a season, and some continue 
for many years, but these are composed of several 
successive generations. They delight in moist, 
shady places, and grow on all animal and vegetable 
substances in the state of decomposition, on dead 
and living trees, on the leaves of all plants; and 
some species are confined to particular plants, under 
the name of the, earth, wood, or fruit fungi, but these 
though some float on the surface of fermented liquors. 
Some fungi grow even in the interior of vegetables, 
and in this respect are analogous to intestinal worms. 
All possess a peculiar odour, by which their presence 
may be recognised. Their taste is insipid, or some-
times astringent, sour, or bitter, and some of the edible 
species very agreeable. Many 
species of mushrooms have been used for food from 
time immemorial in China, India, and Africa, and 
more recently in Europe, where they are now con-
sumed in vast quantities. In some parts of Italy, the 
habitants have been at times reduced entirely to 
this aliment. They are cultivated in layers through-
out all Europe, by which means a continual supply is 
furnished during the season; and various methods have 
been devised for preserving them through the 
remainder of the year. Many species are exceed-
ingsly palatable; either eaten raw, or boiled, in con-
vulsions, and speedy death. It has been observed, 
that acids diminish considerably the deleterious ef-
effects of mushrooms, as also sometimes boiling. In 
cases of poisoning, an emetic should be immediately 
administered. In gathering mushrooms for the 
table, great care should be taken to exclude all 
poisonous species; those that possess a milky juice 
are generally acrid, and should be rejected, as also 
those which have a sombre hue, and whose substance 
is heavy, tough, or fibrous, and those which grow in 
dark places, or upon old trunks of trees. Some 
species give the parts of fructification only to be 
removed; but, besides the poisonous species, all are 
liable to become pungent, unless certain precautions 
are taken. If, for instance, they have lost their 
freshness, or are in a state of decomposition, and 
even at the best of times, they should be eaten with 
mildness. As the poisonous species can be distin-
guished by the smell of a particular part, it is better 
to use those only whose innocence is well established. 
Some species are employed in dyeing yellow. Other 
fungi are the bane of the husbandman, destroying in 
a short time the fruits of his labour; as blight, mil-
dew, &c.

FUNK, GODFREY BENEDICT; a popular German 
teacher, was born at Hartenstein, in the county of 
Schonburg, in 1734. His education, till his thirteenth 
year, was conducted in his father's house. He was 
destined to theology, but the responsibilities of the 
profession appeared to him too great, and, in 1755, 
he began the study of the law, at Leipsic, by the 
advice of Cranmer; but, in the following year, Cra-
mer, then court minister at Copenhagen, invited him 
into his house as a tutor to his children. Funk re-
mained with him thirteen years, studying theology, 
and became intimately acquainted with some dis-
tinguished men, among them Klopstock. In 
1763, he was elected a public teacher at the royal 
school in Magdeburg, of which he became rector in 1772, 
and retained this office forty years. Funk was one 
of the best of teachers, taking the word in its widest 
extent. He devoted himself so entirely to his pupils, 
that he declined the honour of the chancellorship of the 
consistory, offered him by Frederic the Great, 
from fear that it would interfere with his duties. 
Funk died June 18, 1814. His pupils erected a 
monument to his memory, and his bust was placed in 
the cathedral, with the inscription Schola, ecclcsia, 
patriae decora. His works have been published in two 
volumes, with a biography. Funk published several 
school books, very popular in a great part of Ger-
munity.

FURCA, or FORD MOUNTAIN; a mountain 
13,171 feet high, in the Valois, so called because the 
country, viewed from the mountain, looks like a fork, 
or, according to some, because the mountain has two 
points. It lies on the north-eastern side of the 
Valois, and forms the chief central point of the high 
Alps.

FURIES, Eumenides, Erinyes (among 
the Romans, Furies, and Dirae); deities in the Greek 
mythology, who were the avengers of murder, pa-
thetic, and filial ingratitude. They sprung from the 
drops of blood which fell from Uranus, when he was 
mutilated by his son Kronos or Saturn. Others make 
them the daughters of Acheron and Nyx.
mythologists reckon three of them, and call them Medea, Medusa and Tisiphone. Eschylus, in the chorus of the tragedy of the Eumenides, introduced fifty furies, and with them Fear and Horror, upon the stage. These terrible beings were described as clothed in black robes, with serpents instead of hair, with fingers like claws, an outstretched tongue, eyes dripping with gore. They were the suckers of fear, from whom when the blood streamed down their necks, and from whom, when enraged, oozed a venom, that spread like a leprous-spot, wherever it fell, and made the ground barren. They were regarded with great dread, the Athenians hardly daring to speak their names, and calling them only the ensure furies, with which the progress of good taste and information among the Greeks, the mythology of these frightful fiends underwent several changes. The sculptures, proceeding on the idea of their being hunters of men, represented them as beautiful hunting nymphs, whose character was indicated by the fur trade of their expression, by the torch, dagger, and other similar emblems. The enlightened philosophers first, and afterwards the common people, saw in them only personifications of the torments of a bad conscience. Then it was, that they received the name of Eumenides, i.e. the benevolent. A small but accurate idea of this subject has been written by Böttiger, entitled Die Furienmaske im Trauerspiel und auf Bildwerken der alten Griecken (Weimar, 1801).

FURT; a German ending of geographical names, meaning a ford in rivers; as, Frankfurt (Frankfurt), Klagenfurt.

FURTH; a manufacturing town in Bavaria, in the circle of the Rezat, at the conflux of the Rednitz and Pegnitz; four miles W. of Nuremberg; population, 16,700; 7000 Jews. It contains two churches, four synagogues, and a Jewish university, with 200 students. The inhabitants are mostly employed in manufactures, as glass of all kinds, watches, saddles, stockings, gold-beating, joinery, &c.

FUR TRADE. The Indian or fur trade commenced early in the seventeenth century, and was carried on by the early French emigrants. Quebec and Montreal were, at first, trading posts. The trade was then, as now, with the Indians, for furs and ammunition, &c., for the beaver and other furs collected by the natives, and was effected by the intervention of the voyageurs, engagés, or coureurs des bois. These men carried burdens of merchandise on their backs to the Indian camps, and exchanged their wares for peltries, with which they returned in good order. Shortly after the discovery of the Mississippi, permanent houses, and, in many places, stockade forts, were built, and men of capital engaged in the trade. Detroit, Mackinac, and Green Bay were settled in this manner. The manner of the fur trade has undergone no material alteration since. Traders now, at least with the more remote tribes, enter the Indian country with boats laden with goods, and manned with Canadian boatmen, who perform the same service above attributed to their ancestors. The engagés are a hardy, patient, and laborious race, habitually making excursions of which no other people are, perhaps, capable, and enduring all hardships and privations for small pay.

In 1670, shortly after the restoration of Charles II, he granted to prince Rupert and others, a charter for the Hudson's bay. The company, after a canvass, with the aborigines on and about Hudson's bay. A company, then and after called the Hudson's bay company, was formed in consequence. The trade was then more lucrative than at present. In the winter of 1783—4, another company was formed at Montreal, called the North-west fur company, which disputed the right of the Hudson's bay, and actively opposed it. The Earl of Selkirk, at that time, was the head of the Hudson's bay, and conceived the plan of planting a colony on the Red river of lake Winnepeg. Of this colony, the North-west company was suspicious. In consequence of this, and the evil feelings naturally growing out of a contrariety of interest, a war ensued between the companies, and in 1810 the latter was given to outrage and barbarity. Weaned, at last, the companies united, and are now known by the name of the Hudson's bay fur company. The colony established by lord Selkirk soon broke up, the settlers removing to the United States.

Of all who have traded with the aborigines, the French were the most popular and successful. They did, and do conform to the manners and feelings of the Indians, better than the English and Americans ever could. Most of the persons now engaged in the fur trade, in the region north of the Missouri, are French; and they are much esteemed by the natives, with whom they frequently intermarry. The male offspring of these alliances are commonly employed as interpreters, engagés, &c. They are handsome, athletic men. Mixing the blood seems to improve the race.

The Indian trade is carried on the great lakes and the Upper Mississippi with its branches, has long been in possession of the North American fur company, the principal directors of which are in the city of New York. In the year 1822, a new company, entitled the Columbia fur company, was organized, to trade on the St Peter's and Mississippi. It was projected by three individuals, who had been thrown out of employment by the union of the Hudson's bay and North-west, as before mentioned. Its operations soon extended to the Missouri, whither its members went from the sources of the St Peter's, with carts and wagons, drawn by dogs. When it had, after three years' opposition, obtained a secure footing in the country, it joined with the North American. There was another company on the Missouri at the same time. Furs were also obtained from the Upper Missouri and the Rocky mountains, as follows: Large bodies of men (under the pretence of trading with the Indians) were sent from St Louis, provided with traps, guns, and all things necessary to hunters and trappers. They travelled in bodies of from 50 to 200, by way of security against the attacks of the savages, till they arrived at the place of their destination, when they separated, and pursued the fur-clad animals singly, or in small parties. When their object was effected, they assembled with their peltry, and descended the Missouri. They did not always invade the privileges of the natives with impunity, but sometimes suffered severely in life and property. This system still continues, and its operatives form a distinct class in the state of Missouri.

The articles used in the Indian trade are chiefly these: coarse blue and red cloth and fine scarlet, guns, knives, blankets, traps, coarse cottons, powder and ball, hoes, hatchets, beads, vermilion, ribbons, kettles, &c. We know no Indians that buy horse furniture, but the Savages and Foxes. The furs given in return are those of the beaver (but this is scarce on this side the Rocky mountains), otter, musk-rat, marten, beaver, deer, lynx, and buffalo. Racoons are now of little value. The fur-clad animals, with the exception of the bear, are almost exterminated on the Mississippi and the great lakes, owing entirely to the fur trade. The skins of animals killed in summer are good for nothing; and the farther north the furs are taken, the better is their quality.
The course of a trader in the North-west is this: He embarks from Michilimackinac, or St Louis, late in the summer, with a Mackinac boat, laden with goods. He takes with him an interpreter, commonly a half breed, and four or five engagés. On his arrival at his wintering ground, his men build a store for the goods, an apartment for him, and another for themselves. The huts are built rough logs plastered with mud, and roofed with ash or linden slabs. The chimneys are of clay. Though rude in appearance, there is much comfort in them. This done, the trader gives a great portion of his merchandise to the Indians, on credit. These credits are from £5 to £20 in amount, according to the reputation of the applicant as a hunter. It is expected that the debtor will pay in the following spring, though, as many neglect this part of the business, the trader is compelled to rate his goods very high. Thus the honest pay for the dishonest.

Ardent spirits were never much used among the remnant tribes. It is only on the frontier, in the immediate vicinity of the white settlers, that the Indians get enough to do them physical injury, though, in the interior, the traders, in the heat of opposition, employ strong liquors to induce the savages to commit outrage or to defraud their creditors. By this means, the moral principle of the aborigines, and of the white people, is entirely destroyed. Spirit is commonly introduced into their country in the form of high wines, they being less bulky, and easier of transportation, than liquors of lower proof. Indians, after having tasted, become extravagantly fond ofthem, and will make any sacrifice, or commit any crime, to obtain them.

An interpreter is necessary to a fur trader, whether he speaks the language of the tribe with which he deals himself, or not. It is the duty of an interpreter to take charge of the house, and carry on the business in the absence of the principal. He also visits the camps, and watches the debtors. Those traders who are employed in the service of a company, as, for instance, the North American, are called clerks, though they seldom use the pen. Many of them cannot write or read. They receive from £60 to £140 per annum, each.

Some traders venture into the Indian country on the agents' account, but are usually overcome by the opposition of the established companies, whose servants employ every means to ruin them.

In the region of prairie, dog sledges are used for transportation in the winter. The sledge is merely a flat board turned up in front, like the runner of a sleigh. The dogs are harnessed and driven tandem, and their strength and powers of endurance are very great.

The laws regulating intercourse with the Indians require the traders to remain in their houses, and not to visit the Indians in their camps; but they are universally disregarded. It is hardly necessary for the savage that they should be. Traders are always better off on their own ground, and provided for travelling than Indians, and the latter are saved from the danger and hardship of exposure in the open prairie in winter. The competition that naturally results from the practice, is of advantage to them, as they get their wants supplied. The practice naturally induces the Indians who have substituted articles of European manufacture, for their primitive arms and vestments, are wholly dependent on the whites for the means of life, and an embargo on the trade is the greatest evil that can befall them. Did our limits permit, we could adduce instances of the worst consequences of the fur-trade diseased in it. The way in which it operates on the Indians has been already partially explained. As to the traders, they are, generally, ignorant men, in whose breasts interest or comes religious and morals. As they are beyond the reach of law (at least in the remote regions), they disregard it, and often commit or instigate actions that they would blush to avow in civilized society. Most of them are connected with Indian women, after the custom of the country.

In consequence of the fur trade, the buffalo has receded, and large tracts of the best land are studded with their lodges. Formerly, an Indian killed a buffalo, made garments of the skin, and fed on the flesh while it lasted. Now, he finds that a blanket is lighter and more convenient than a buffalo robe, and kills two or three animals, with whose skins he may purchase it. To procure a gun, he must kill ten. The same causes operate to destroy the other animals. Some of the tribes, the Ottaways for example, hunt on the different parts of their domains alternately, and so preserve the game. But by far the greater part of the aborigines have no such regulation. The fur-clad animals are now to be found in abundance only in the far north, where the rigour of the climate and the difficulty of transportation prevent the free access of the traders, and on the Upper Missouri, and towards the Rocky mountains. In the last mentioned of these retreats, the enterprise of the West is rapidly exterminating them; and the time is not, probably, far distant, when the fur trade will be spoken of as a thing that once existed within the territory of the United States.

FURZE, (ules europaeus) is a low, shrubby plant, very hardy, and very abundant in barren soils throughout the west of Europe. It belongs to the natural order leguminosae. The stem is two or three feet high, very much branched, and the branches spongy at the summit; the leaves, simple; the calyx, persistent, biparite; the flowers, solitary and yellow; the fruit consists of an inflated hairy pod, scarcely longer than the calyx. It often covers, exclusively, large tracts of country, and makes a splendid appearance when in flower. In barren, sandy soils, this plant is cultivated with advantage for fodder, as it affords green succulent food throughout the winter, when no other can be obtained. Horses appear to be particularly fond of it; but for cattle, it is necessary first to bruise it, which is accomplished by a machine constructed on the principle of the cider-mill. Furze, or whortleberry, is sometimes called whortle, and used for fuel. This plant is exceedingly difficult of extermination when it has once obtained possession.

FUSELLI, HENRY, second son of John Gaspard Fuesali, which is the more correct way of spelling the family name, is supposed to have been born in 1739, at Zurich, where his father at that period resided. An extensive collection of prints, to which he had access in his youth, first inspired him with a strong inclination to practise painting as a profession, contrary to the wishes of his father, who was anxious to see him in the church. Many of these were copies from the works of Michael Angelo, with which the young artist was more especially struck: he made that great master ever after his principal model. Being placed, in pursuance of the views which his father entertained for him, at the Humanity college, he there contracted a friendship with the celebrated Lavater. The two friends distinguished themselves by their extraordinary ability which they displayed in bringing to justice a leading magistrate in one of the bailiwicks of Zurich, who had committed an act of glaring oppression, relying on his wealth and connexion to secure him with impunity. A pamphlet which appeared from the pens of Fuesali and Lavater, only engaged the culprit to take the matter up, and the culprit absconded rather than face the consequent investigation. But although thus far triumphant, the secret enmity which this
affair produced against the authors proved so annoying, that in the end Fuseli, after taking his degree in the college, accompanied his friend to Vienna and Berlin, in which latter capital they prosecuted their studies for some time, under the learned Sulzer. Here Fuseli obtained an intimate acquaintance with the English language, and was induced by the English ambassador that the learned Sir Robert Smith, who was much pleased with his genius, to visit England. In 1762, he arrived in London, and, through the introduction of his patron's letters, obtained the situation of a tutor to a nobleman's son, whom he accompanied to Paris. On his return, in 1765, appeared his first production, Reflections on the Painting and Sculpture of the Greeks, and, soon after, an essay in defence of Rousseau, against the attacks of Voltaire. Some of his early sketches being about this time shown to Sir Joshua Reynolds, the warm encouragement bestowed on him by that distinguished artist decided young Fuseli's fate, and he determined to devote himself to painting. His first picture was, Joseph interpreting the Dreams of the chief Baker and Butler. In the pursuit of his profession, Mr. Fuseli, in 1770, visited Italy in company with his friend Armstrong, and, while in that country, transmitted to England several pictures, especially two taken from the works of Shakespeare—The Death of Beaufort, and A Scene from Macbeth. He left Italy in 1778, and, after paying a short visit to his native place, returned to England, where he is believed to have suggested to the late Mr. Boydell the idea of forming the Shakespear gallery, for which institution he painted eight of his best pictures. In 1790, he became a royal academian, and in the course of the next nine years painted a series of forty-seven pictures from Milton, afterwards exhibited as the Milton gallery. In 1799, he succeeded Mr. Barry, as professor of painting to the royal academy, and, in 1804, Mr. Wilson, as keeper to that association. In 1805, he gave to the world an improved edition of Pilkington's Dictionary of Painters, and, in 1817, received the diploma of the first class of the academy of St. Luke at Rome. Mr. Fuseli continued to paint till within a week of his death, which took place while he was in visit to the countess of Guildford, at Putney Hill, in 1825.

FUSIBLE METAL; an alloy of three parts of lead with two of tin and five of bismuth, which melts at 107°Fahr.

FUSTIC WOOD is of a yellow colour, and contains great quantities of colouring matter, forming the most durable of all the yellow dyes, which, however, is mostly used in compounding green and a variety of drab and olive colours, as, when employed alone, it is dull and deficient in clearness. This wood is the product of the Broussonetia tiatrix, a tree allied to the mulberry, inhabiting the West Indies, Mexico, Brazil, Colombia, and particularly abundant in Campeachy, whence it is exported very extensively. It also grows west of the Mississippi, within the territory of the United States, extending as far north as the river Arkansus, and the wood, being remarkably firm, solid, and elastic, is highly prized, and generally used by the Indians of those parts for making their bows. It is there known by the appellation of Osage orange, or bow-wood, and is the material of all arrows. It is described as measuring the height of sixty feet and upwards in the West Indies, but in Louisiana it reaches only twenty-five or thirty, separating near the ground, into long, slender, flexuous, and terete branches; the bark and fruit, when wounded, exude a milky juice; the leaves are alternate, oval, and entire, five or six inches long and two or three broad, smooth and shining on the upper surface; the fruit resembles a large orange in external appearance, and consists of woody fibres, radiating from the centre, and terminating in a granulated surface.

FOX, JOHN, a celebrated German contrapuntist and composer of sacred and theatrical music, during the reigns of the emperors Leopold I., Joseph I., and Charles VI., was born in Styria about the year 1660, and held the office of imperial chapel-master in Vienna for about forty years. Charles VI. esteemed him so much, as to cause the gouty old man to be carried, on a litter, from Vienna to Prague (1723), to superintend an opera at the coronation festival. Fox had great influence on the musical taste of his time, by his compositions. His sacred music is still esteemed, particularly a missa canonica, which was published in Leipzig.

FYT, JONK, a Dutch painter, born at Antwerp, 1625. The year of his death is not known. There are pictures by him as early as 1652. His subjects were chiefly game, beasts, birds, fruit, flowers, bass-reliefs. He painted much with Rubens, James Jordaens, and Th. Willeboort; and his pencil was so prolific, that almost every important collection of paintings has some of his productions. His drawing is highly natural, and yet elegant; his colouring, glowing and vigorous; the colours, especially in the light, laid on richly. In all these qualities, he rivals De Voes and Snyder. He was also distinguished for skill in the art of etching. He published, in 1642, two series of representations of animals. David Koning was his scholar.

G

G; the seventh letter in the English alphabet. If we bend the tongue so as to form an arch, which presses against the roof of the mouth, and produce a sound by breathing and lowering the tongue, the sound is called, in English, hard g. If we press the tongue against the roof in the same way, and expire without changing its position, we produce the strong German guttural, as in ach, or the Spanish, as in muger. If we press the tongue to the roof in the same way, only a little more towards the lips, the guttural is produced, which appears in the German ich and brechen. If, with the tongue thus situated, we breathe more softly, we produce the German j, or the English y, as in yellow. If we press the point of the tongue against the front part of the roof, and partly against the gum, the sound produced is the English soft g, as in gem, or the Italian ge. This slight difference in the mode of producing these sounds, is the reason that the character g has been used to express all of them in different languages, and several of them in the same languages. G is nearly connected with C (as in ca), from which it
originated; hence it was called nova consonans by Diomed, 1. 2, page 417, Putsch. The Romans began to use it late, and, therefore, c and g are often written for each other, as Carius for Catius. The Romans explained it to the Greek, as aggulis, for angelus, iggus, for ingermus; and even Ulphilus writes gg for ng, as, for instance, figger for finger, avengello for evangelium, tuggo for tongue. The sound of w, or v, very nearly approaches that of gu, and we often find them interchanged; for instance, William or Wilhelm means Guillaume. From it into Ginesus, from it into Spaniards, when they are unable to pronounce the English w, often use gw instead, and say guce for we. We might add, that Wales is called, in French, Galles. A numeral G was anciently used for 400, and with a dash over it, for 40,000. G, in music, is the nominal of the fifth note in the natural diatonic scale of C, and to which Guido applied the monosyllabic sol. It is also one of the names of the highest cliff.

GABALIS (Conte de Gabalis, ou Entretiens sur les Sciences secrètes); a French romance of the last part of the sixteenth century, the author of which was the abbé de Villars, a relation of the antiquary Montfacon, born in the year 1640, was shot in 1675, while on a journey, by one of his relations. In this romance, he exposed the cabala (q. v.) to ridicule, the friends of which accused him of having attacked holy subjects, and he was forbidden to enter the pulpit. The romance was founded on the Châtire del Gabinetto of Bory. A renowned adept, the count of Gabalis, is represented as having found in the author capacity to understand the secrets of the cabala, and therefore explains to him the secret science, in five conversations. This would, probably, be known only to those who had occupied themselves with the history of the mystical philosophy of the Cabalists, Gnostics, and New Platonists, that mixture of Oriental poetry, Greek philosophy, and Christian religion, if modern poets had not drawn many of their fictions from the demonology here set forth. "The immeasurable space between the earth and the heavens," said the count, "has many nobler inhabitants than birds and insects; the wide-extended sea has other guests than fishes; the depths of the earth are not for the mole alone; and the element of fire, far nobler than the three others, is not made to remain useless and unoccupied, but the introduction contains the theory of the four spirits of the elements, of which are the Sylphs (spirits of air), the Undines (spirits of water), the Gnomes (spirits of earth), and the Salamandrs (spirits of fire). How welcome such a system of pneumatology was to the poets, whom the Christian religion had deprived of their mythical machinery, without affording an adequate substitute in the fairies and magicians, and how much romantic poetry has gained by it, is evident. This system furnished Pope with the machinery which he has employed with so much elegance and effect in his Rape of the Lock.

GABRIEL. See Gabriel.

GABRIEL (hero of God); according to the Jewish mythology, one of the seven archangels who interpreted to the prophet Daniel his dreams. He is introduced in the story of Tobias. According to the Biblical history, he announced to Zacharias the birth of John, and to Mary the birth of the Saviour. The rabbis say, he is the angel of death for the Israelites, and all the souls of that nation are delivered to him by the inferior receivers of spirits, or angels whose sole business it is to receive a certain spirit, and who, after delivering it up, quit the world. According to the Talmud, Gabriel is a prince of fire, who presides over thunder and the ripening of fruits. By the command of Jehovah, he set fire to the temple, before it could be burnt by the soldiers of Nebuchadnezzar, and the temple uttered its own lament: He once hunted Leviathan, and, with the assistance of God, conquered him. According to the Mohammedan mythology, he is one of the four angels peculiarly favoured by the Deity, as being the author of the divine decrees, and the angel of revelation, in which capacity he dictated the whole Koran to Mohammed. He once caught away Mohammed, and transported him so rapidly through the seven heavens, that, on his return, he found a vessel yet in the act of sailing, which he had overturned on his departure.

GADFLY. See Estrus.

GAEL. The Gael belonged to the great family of Celts, a nation formerly inhabiting a great extent of country, of uncertain origin. Their name is derived, by some, from the Tenc-tont word Wallen, pronounced Vallen, signifying to wander, as is also Wallia or Galia, Vandal, Walloons (g and w or v are often exchanged for each other; see the article G). It is supposed to have been given them on account of their ancient emigrations in Asia and Italy. (Livy, III. 20. 7; Horat. II. 1. 11.) From Gaul, they passed over into Britain and the adjacent islands. The ancient Scots or Irish were of the same origin, as were also the Welsh, as the name Wales (in French, Galles) indicates. Upper Italy, part of Germany, down along the Danube to Pannonia and Hylivicum, and Helvetia, were occupied by their colonies. At the period when history first gives an account of them, they were not without traces of civilization, as appears from the singular religion of the Druids, the songs of the bards, and a kind of civil and religious organization existing among them, which, in consequence of the disunion of their chiefs, gave way before the Roman power. One tribe of them advanced as far as Greece, Thrace, Asia Minor, and made themselves formidable under the name of Galatians. (Paus. Att. 3.) In France, probably, but few of the ancient Gaels survived. At an early period, they were pressed on one side by the Belgians and Kymry; on the other, by the Romans, and, finally, overwhelmed by the German tribes. Traces of them remained only in remote and retired districts, as in Ireland, in the Hebrides, and in the Highlands of Scotland. See Gaul.

Gaelic, or Erse, is the name of that dialect of the ancient language spoken in the Highlands of Scotland. According to the opinion of antiquarians, the Celtic, at the time of the Roman invasion, was universally spoken over the west of Europe. Though it is divided into a variety of dialects, yet they all show the clearest proofs of a common origin. The most remarkable dialects of the Celtic still in existence, are the Gaelic, the Welsh, the Manks, the Irish. Another dialect, the Cornish, was spoken within the memory of man. (See the Introduction to Mackintosh's History of England.) To this list may be added the dialect spoken by the natives of the province of Bretagne, in France. The Gaelic, which, from a variety of causes, has retained, in a considerable degree, its original purity, is bold, expressive, and copious. It derives no assistance from the languages either of Greece or Rome, from which it differs in its structure and formation. Having affixes and prefixes, it greatly resembles the Hebrew before the infusion of its nouns and verbs. Like the modern French, it knows only two genders, masculine and feminine. If ever the Gaelic possessed an alphabet peculiar to itself, no traces of it now remain. Nor can it boast of any original literary production, unless the poems of Ossian be allowed to form an exception. The Scriptures and other religious books have been translated
GAETA—GALBA.

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into Gaelic for the use of the inhabitants of the Highlands. More than two-thirds of the names of places in the united kingdom of Great Britain and Ireland are of Celtic origin. Not many years since, a Gaelic was established in Scotland, for the performance of divine worship in Gaelic, according to the forms of the church of Scotland.

GAETA, duke of. See Gauadin.

GAETA, a Neapolitan fortress, on the gulf of Gaeta, lon. 13° 32' E., lat. 41° 2' N., with 10,300 inhabitants, is a small borough, and is situated about twenty leagues from Rome, and twelve from Naples, upon a promontory, which, according to Virgil (En. vii. 1), has its name from Caleta, the nurse of Æneas. It was founded before Rome, and had, for some time after the downfall of the Roman empire, a republican constitution. It was afterwards governed by dukes, who acknowledged the pope as their feudal lord. Gaeta is one of the strongest fortresses of Europe, as it can be attacked by land only from a narrow istmus. The environs of this ancient city are enchanting, and the many pretty villas in the suburbs (the ancient Romans built many country houses along the sea-coast) add to the whole scenery, with its vineyards and olive-gardens, very romantic. In the middle ages, Gaeta was besieged several times, particularly in 1435, by King Alphonso of Aragon. In modern times, it has sustained three memorable sieges; in 1702, when it was taken by assault by the British army; in the first siege of three months; in 1734, when it surrendered, after a siege of five months, to the united army of France, Spain, and Sardinia. It was besieged in 1806, by the French, when the prince of Hesse-Philippsthal refused to surrender it after the capture of Naples. He was finally wounded and obliged to retire to Sicily, and Gaeta surrendered July 18th, after a siege of five months.

GAILLARDE (Italian, Gagliardo); an ancient Italian dance, of a sportive character and lively movement, the air of which was in triple time. It was called, likewise, Romanesque, because it was said to have come originally from Rome.

GAIUS. See Caesar.

GALACTOMETER (milch-measure), invented by Cadet de Vaux. The first degree shows all pure milk. The second, milk with a fourth water; the third, milk with a quarter water; the fourth, milk with a half water. Every one knows that the milk is richer towards the end, than at the beginning of the milking. The milk of a pregnant cow, too, is richer than that of one which has just begun to be milked. Food, season, and rain, exercise a great influence on the quality of butter in the milk. The instrument seems, therefore, to be uncertain.

GALATEA; in heathen mythology, daughter of Nereus and Doris. The Cyclops Polyphemus persecuted with his love the charming nymph, though he gained nothing but ridicule in return. The fair shepherd Acis of Sicily, enjoyed her affection, and suffered death on her account; for Polyphemus, surprised them in tender embraces, and mad with jealousy, hurled a rock at them, which dashed Acis in pieces, while Galatea escaped into the sea. Acis was transformed into a fountain, and hastened to meet his mistress in a safer region.

GALATIA; a part of Phrygia Major, inhabited by the Galatians, a mixture of Greeks and Gauls (Celts); thence also the name Gallograeci, and later, Galata.

GALAXY (Via Lactea, or Milky Way), in astronomy; that long, broad, and bright line or series which embraces the heavens, forming nearly a great circle of the celestial sphere. It is inclined to the plane of the ecliptic at about an angle of 60°, and cuts it nearly at the two solstitial points. It traverses the constellations Cassiopeia, Perseus, Auriga, Orion, Gemini, Canis Major, and the Ship, where it appears most brilliant in southern latitudes; it then passes through the fixed stars of the Centaur, the Cross, the Southern Triangle, and returns towards the north by the Altar, the tail of the Scorpion, and the arc of Sagittarius, where it divides into two branches, passing through Aquila, Sagitta, the Swan, Serpenterius, the head of Cepheus, and returns into Cassiopeia. The ancients had many singular opinions of this phenomenon; but modern astronomers have long attributed it to a great assemblage of stars, and doctor Herschel has confirmed these conjectures, having discovered, in a space of about 150 long, by 2° broad, no less than 50,000 stars. This, however, instead of satisfying the curiosity of astronomers, only gave rise to further inquiries and hypotheses; amongst others, that of doctor Herschel, which is very interesting. He supposes the sidereal universe to be distributed into nebulae and clusters of stars, and the Milky Way to be that particular cluster in which our sun is placed. In a paper on the construction of the heavens, in 1783, doctor Herschel says, it is probable, that the great stratum, called the Milky Way, is that in which the sun is placed, though perhaps not in the centre of its thickness, but not far from the place where some smaller stratum branches from it. Such a supposition will satisfactorily, and with great probability, account for all the phenomena of the Milky Way, which, according to this hypothesis, is no other than the appearance of the projection of the stars contained in this stratum and its secondary branch. Doctor Herschel then solves a general problem for computing the length of the visual ray. The telescope which he used will reach to stars 497 times the distance of Sirius. Now, Sirius cannot be nearer than 100,000 × 190,000,000 miles; therefore doctor Herschel's telescope will at least reach to 100,000 × 190,000,000 × 497 miles. And doctor Herschel says, that in the most crowded part of the Milky Way, he had fields of view that contained no less than 588 stars, and these were continued for many minutes, so that, in a quarter of an hour, he has seen 116,000 stars pass through the field of view of a telescope of only 15' aperture; and, at another time, in forty-one minutes, he saw 288,000 stars pass through the field of his telescope. The instrument in his telescope discovered stars not seen before, so that there appears no bounds to their number, or to the extent of the universe.

GALBA, Searges, or SERVIIUS SULPICIUS; successor of Nero, born B. C. 4, of the ancient and celebrated family of the Sulpicii. He was made pretor before he had reached the lawful age, then governor of Aquitania, and, a year after, consul. Caligula appointed him general in Germany. He soon repulsed the Germans who had invaded Gaul, and restored the ancient military discipline. After the death of Caligula, he caused Claudius, who received him, for this service, among his most confidential friends, and sent him, as proconsul, to Africa, where great confusion prevailed. In two years, Galba restored order, obtained the honours of a triumph, and was received among the priests of Augustus. He lived afterwards in retirement till the middle of Nero's reign, that he might avoid exciting suspicion. Nero appointed him governor of Hispania Tarraconensis; but soon after became so exasperated against him, that he ordered him to be secretly assassinated. Galba then revolted against the emperor, but encountered difficulties, when news arrived of the death of Nero (A. D. 68); and he himself was chosen emperor by the pretorian cohorts in Rome. Ambassadors from
the senate made known to him his elevation. He went directly to Rome, and caused several insurgents to be executed. By this act, as well as by his in- ducements of his friends, which he gave absolutely, and by his excessive avarice, he excited universal displeasure. Scarcely had he entered upon his second consulship, when the legions in Upper Germany revolted against him. This induced him to choose a colleague in the government, under the name of an adopted son. Instead of Otho, who was favoured by the soldiery, he selected Piso Licinius, who was hated by them on account of his rigid virtue. Otho, offended by this neglect, resolved to get possession of the throne by force of arms. The pre-torian cohorts first declared themselves in his favour, and Galba, attempting in vain to restore order, was attacked and slain A. D. 69. He was seventy-two years old, and had reigned three months.

GALBANUM is the concrete juice of the bulb galbaniferum, a shrubby plant, belonging to the natural order umbelliferae, and is usually imported from Syria, Persia, and the East Indies. The galbanum of commerce, however, is perhaps obtained from several species of babun. This gum-resin comes in large, soft, ductile masses, of a whitish colour, becoming yellowish with age, and possessing an acid, bitter taste, with a strong, disagreeable odour. In its medical properties, it is intermediate between ammoniac and saltpetre, which, likewise the products of plants of the same natural order. At present, it is rarely used, but in combination with other articles, it forms some officinal preparations.

GALEN, Claudius; a Greek physician, born A. D. 131, at Pergamus, in Asia Minor. His father, Nicem, an able architect and mathematician, gave him a careful education, and destined him to the study of medicine. After having enjoyed the instructions of several renowned physicians, Galen visited Lycia, Palestine, and Alexandria, then the capital of the literary world. He attended particularly to anatomy, and returned to Pergamus, his native city, at the age of twenty-eight, where he received a public appointment. A sedition induced him, when thirty-four years of age, to go to Rome, where he acquired great celebrity by his successful cures, and by his skill in prognostics. He also drew the applause of the public to such a degree, that he was obliged to give up the delivery of his anatomical lectures, and finally to go to Greece, just as a contagious disease broke out in Rome. He travelled through various countries to investigate the most remarkable productions of nature and different medicines, and a year after, he was invited to Aquileia by the emperors Marcus Aurelius and Lucius Verus. Here he prepared the The-richa. Galen had great merit as a physician and philosopher, especially by completing the empirical pathology, and laying the foundation for a just theory of sensation, and the peculiar animal functions of the body, as well as giving evidence of deep reflection, as well as an historical knowledge of the old Greek systems of philosophy, and extend to every department of medicine. Numerous as those extant are, we have now only a part of his productions; for many were burnt when his house in Rome was consumed. According to Fabricius, we have eighty-two books of Galen, consisting of spurious, fragments of nineteen which are lost, and a commentary on eighteen works by Hippocrates. Of his lost works, fifty medical and 118 mostly philosophical, are mentioned in the Bibliotheca of Fabricius. The fullest and most complete edition, in Greek only, is that of 1678, folio, and the

Greco-Latin one, in 13folio volumes, by Ren. Chat- tier, with the works of Hippocrates added, Paris, 1679. In 1819, doctor Kuhn, in Leipsic, undertook a new edition of the works of Galen, at the instance of the citizens. He conquered it in 1661, and built a citadel to secure his power. In 1604, he was appointed one of the leaders of the imperial army against the Turks in Hungary. In the following year he took up arms for England against the Dutch, and gained many advantages over them. Peace was concluded in 1666, by the mediation of Louis XIV. In 1672, the war broke out anew, in consequence of some territory which Holland withheld from him. In alliance with France, he took from the United States several cities and strongholds. The emperor having compelled him to conclude a peace, he united himself with the English, made an alliance with France, and made new conquests. In 1674, he formed an alliance with Spain, and gave battle to the Dutch troops. He was a man of extraordinary enterprise, one of the greatest generals of his time, an adroit diplomatist in the school of Ferdinand of Bavaria, and, if he had possessed no more, might have become a second Alexander. He died Sept. 19, 1678, in the seventy-fourth year of his age.

GALENA, in mineralogy; the sulphur of lead, found both in masses, and crystallized. The primitive form of its crystals is a cube; its colour is bluish gray, like lead, but brighter; lustre, metallic; texture, foliated, or lamellar, soft, but brittle; specific gravity, 7:22 to 7:587; effervescences with nitric and muriatic acids; it contains from 45 to 83 lead, and from 0:86 to 0:16 of sulphur, generally some silver, and sometimes also antimony, zinc, iron, and bismuth. Before the blow-pipe, it usually decomposes, and on charcoal is decomposed and melted, yielding a globule of metallic lead. Sometimes the silver is in the proportion of ten, twenty, forty, or even more than 100 ounces to a ton of the ore. It is then worked as an ore of silver, and called argentiferous galena. The varieties containing the same proportion of silver are called higher lustre, or the palest colour. In fact, they are sometimes blackish-gray. Galena is sometimes contaminated with silex and lime. Some varieties do not yield more than fifty or sixty per cent. of lead. Sulphur of lead occurs in primitive and transition mountains, but is more frequently found in secondary rocks, especially in compact limestone. Its beds sometimes alternate with shell limestone. It has also been found in beds of coal, and its veins sometimes contain bitumens. Sulphuret of lead constitutes beds and veins, both of which are sometimes very extensive. It is found, more or less, in every country in Europe, especially in Switzerland and in the United States of America. The mines of the Missouri and of the North-western territory, are very rich. The deposit of galena, in which the mines of Missouri are situated, is evidently one of the most extensive and important lithothropic discovered. Most of the lead of commerce is ob- tained with Denmark against Sweden, and sold for a little silver. The annual produce of all the lead mines of Great Britain is between 45,000 and 48,000 tons, and is obtained chiefly from galena. See Lead.

GALENA is an infant town in the state of Illinois, situated near the north-west angle of the state, at the mouth of the Kaskaskia. It was settled in 1678, by the Greek edition of Basle, 1238, folio, and the
working of which constitutes almost the only occupation of the inhabitants. In the year 1789, lead to the amount of 12,000,000 pounds was taken from these mines.

GALENISTS. See Anabaptists.

GALIANI, FERDINAND, an Italian abbe, celebrated for his wit and writings, was born in the year 1758, at Chiel, in the Kingdom of Naples, where his father, a nobleman, was assessor of the royal court of justice. He was educated under the care of his uncle, the archbishop of Tarentum, and applied to the study of the law. A humorous collection of verses, on the death of the public executioner, in ridicule of the custom of celebrating the death of eminent persons by the academy Dereggi emall, first made him known as a writer. This was not long after followed by his celebrated work Trattata della Moneta, which was published in the year 1750. He soon after, by the desire of pope Benedict XIV., undertook a collection of specimens of the various matter thrown up by Mount Vesuvius; a catalogue of which was published in 1772. This collection he sent to the pope, and on one of the boxes was inscribed, Beatussine pater, fac ut lapides iti panes fiat (Holy father, command that these stones be made bread); the pope took the hint, and gave him a living of 1000 ducats. In 1779, he was appointed secretary to the French embassy, and soon took a leading part among the wits and eminent men of Paris. During his residence in France, he composed Annotations upon Horace, and Dialogues on the Corn Trade, written in opposition to the policy of the free exportation of corn, then recently adopted with a view to encourage agriculture. On his return to Naples, in 1779, he kept up a correspondence with the most distinguished men of France; and their manuscript letters form nine thick volumes in 4to. He died, loaded with honours and offices, and possessed of very general esteem, on the 30th Oct., 1787, in his fifty-ninth year. Besides the works already mentioned, he is the author of Tretrises on the innate Propensities or Inclinations of Men, or, the Principles of the Laws of Nature and Nations, deduced from the Poems of Horace; on the Duties of Princes to other belligerent Powers; and on the Neapolitan Laws.

GALICIA and LODOMIRIA, a kingdom of the Austrian monarchy, is bounded on the W. by Austrian Silesia, on the N. and E. by Poland, and on the S. by Hungary. These two countries were duchies, at first dependent on Hungary, and afterwards belonging to the Austrian crown, by the infamous partition of Poland, in 1772, and, with other provinces, formerly belonging to Little Poland, were erected into a kingdom. In 1758, the Bukowina, which had belonged to Austria since 1777, was added. By the peace of Vienna, in 1809, Austria ceded all Western or New Galicia, a district reducing a city of Cracow and the circle of Zamoski, in East Galicia (20,000 square miles, with 1,470,024 inhabitants); to Russia she ceded 3500 square miles of Old Galicia, with 400,000 inhabitants. The peace of Paris of 1814 restored things, for the most part, to their former state. At present, the country comprises 32,500 square miles, with 4,075,000 inhabitants. The capital is Lemberg. The soil is mostly fertile, and produces grain for export, though agriculture is in a rude state. Honey and wax constitute articles of trade. Black cattle are raised in great numbers; and from horses and for the supply of the cavalry, the native hardness. The horses of the Bukowina are particularly excellent for light cavalry. Buffalo, wolves, bears, game of all kinds, particularly hares, are the wild animals of the country; there are also beavers, which here live a wandering life. The cochineal insect is found, and used for dyeing scarlet. Salt is the most important mineral. It is found in all the mountainous tracts, and is obtained from mines and salt springs. Iron is also found in most of the mountains, but the ore is not very rich. The river Bistrica contains gold. Flints of a fine quality, and minerals of various kinds, are found in different parts of the country. The country is divided into nineteen circles. The government is administered by the Galician chancery. Lemberg is the seat of the provincial government and of a court of appeal. Estates have existed in Galicia since 1775, composed of nobles and deputies of the larger towns. The clergy does not form a separate estate, bishops and abbots being comprised in the noble estate. The estates have the right of imposing the taxes demanded by the emperor, and of making representations to the government. Seventeen arch-offices have been erected for the higher nobility. The manufactures are not important. The established religion is the Catholic. An archbishop resides at Lemberg. There are great numbers of Greeks and Armenians, and Jews, who have a high rabbi. The Lutherans, who have here been called Dissidents, from the time when the country belonged to Poland, have a superintendent at Lemberg. There is a university at Cracow, a lyceum in Zamoski, and six gymnasiums in the principal cities.

GALICIA (anciently, Gallicia); a province of Spain, bounded N. and W. by the sea, E. by Asturias and Leon, and S. by Portugal, from which it is separated by the river Minho. The soil in general is unequal, and the country mountainous, with some small plains on the sea coast. It contains sixty-four cities and towns, but few considerable ones, 3242 parishes, five cathedral chapters, and five collegiate chapters, ninety-eight convents and several abbeys. Santiago is the capital of the province. The other principal towns are Compostella, Corunna, Lugo, Orense, Ferrol, and Vigo. Square miles, 16,736. Delaborde gives the number of inhabitants, in 1807, as 1,345,800, and Minano estimates them, in 1826, at 1,795,199. The inhabitants are styled Gallegos, and are remarkable for their quiet and hospitable disposition, and for the simplicity of their manners and industry. As a very large portion of the soil belongs to the clergy and nobility, great numbers of the Galicians go to the large cities of Spain and Portugal to earn a subsistence as labourers. The name is derived from the Galates, an ancient tribe, who inhabited the country, and who, according to some, were the ancients Romans, and, in 714, to the Moors. In 1069, this province was erected into a kingdom, by Ferdinand the Great, King of Leon and Castle; but the inhabitants in the mountains paid little respect to the royal authority. In 1474, in the reign of Ferdinand V., it was made a province of Spain, retaining the title of a kingdom.

GALILEE, in the time of our Saviour, the most northern province of Palestine, bounded on the E. by the river Jordan, on the S. by Samaria, on the W. by the Mediterranean sea and Phoenicia, and on the N. by Syria and the mountains of Lebanon. It was inhabited mostly by poor fishermen. As the cradle of Christianity, this small country has a general interest. Here lay Nazareth, in which Jesus was educated; here flowed the Jordan, on whose banks he began his ministry and collected together his disciples; here was Cana, where he performed his first miracle; and Capernaum, on the lake of Tiberias, which often saw him within its walls; and Nazin, where he raised the young man to life; here lay the hill on which he delivered the discourses called the sermon on the mount (the height is now called the
Mount of Christ); here was mount Tabor, where his disciples saw him in his transfiguration. The inhabitants of this country, on account of their ignorance and simplicity of manners, were despised by the Jews, who, by way of contempt, called Christians, at first, Galileans, because their religion particularly prevailed in Galilee. At present, Galilee, with the other provinces of Palestine, forms a part of the government of Damascus, in Syria or Soristan, and languishes under the weight of Turkish oppression. Bedouins and hordes of robbers swarm in the desolated valleys, and only a few holy places are still guarded by the descendants of the ancient Christians.

GALILEI, GALILEO, who has gained immortality by his discoveries in natural philosophy, was born, 1564, at Pisa. His father, Vincenzo Galilei, a nobleman of Florence, caused him to be instructed in the ancient languages, drawing, and music, and he very early showed a strong inclination to mechanical labours. In 1581, Galileo entered the university of Pisa, to attend lectures on medicine and the Aristotelian philosophy. The latter, loaded with scholastic rubbish, even then disgusted him, and he afterwards became its declared adversary. That spirit of observation for which he was distinguished, was early developed, when only nineteen years old, the swinging of a lamp suspended from the ceiling of the cathedral in Pisa, led him to investigate the laws of the oscillation of the pendulum, which he was the first to apply as a measure of time. He left it incomplete, however, and it was brought to perfection by his son Vincenzo, and particularly by Huygens, the latter of whom is to be viewed as the true inventor of the pendulum clock. He studied mathematics under Ostilio Ricci, soon exhausted Euclid and Archimedes, and was led, by the works of the latter, in 1586, to the invention of the hydrostatic balance.

He now devoted his attention exclusively to mathematics and natural science; and, in 1590, he was made professor of mathematics in the university of Pisa. He was constantly engaged in asserting the laws of nature against a perverted philosophy, for which he is now extolled as the father of modern physics. He even suffered the severest persecutions. In the presence of numerous spectators, he went through with his experiments, which he performed on the tower of the cathedral, to show that weight has no influence on the velocity of falling bodies. By this means he excited the opposition of the adherents of Aristotle to such a degree, that, after two years, he was forced to resign his professorship. He retired to the house of Filippo Salviati, where he became acquainted with Francesco Sagredo, a worthy Venetian, upon whose recommendation the senate of Venice, in 1592, appointed him professor of mathematics in Padua. He lectured here with unparalleled success. Scholars from the most distant regions of Europe crowded about him. He delivered his lectures in the Italian language, which he first applied to philosophy. In 1597, he invented his geometrical and military compass.

The mathematical truths which he discovered afterwards are of very importance; for example, that the spaces through which a body falls, in equal times, increase as the numbers 1, 3, 5, 7; that is, if a body falls 15 Paris feet (about 16 English) in one second, it will fall 45 in two, 75 in three, and so on.

Whether the thermometer was his invention it is difficult to determine; perhaps he only improved it. He also made interesting discoveries on the magnet. The telescope (q. v.), which, in Holland, remained not only imperfect, but useless, Galileo turned to the heavens, and in a short time made a series of the most important discoveries. He found that the moon, like the earth, has an uneven surface; and he taught his scholars to measure the height of its mountains by their shadow. A particular nebula he resolved into individual stars, and even conjectured that the whole Milky Way, with good instruments, consists of the suns and the planets.

His most remarkable discovery was that of Jupiter's satellites, January 7, 1610. He likewise observed Saturn's ring, though he had not a just idea with regard to it. He saw the sun's spots somewhat later, and inferred, from their regular advance from east to west, the rotation of the sun, and the inclination of the plane of the earth's orbit to the plane of the ecliptic. Schelner, at Ingoldstadt, and John Fabricius, preacher in Ostell, in East Friesland, however, have the honour of first publishing this discovery from the press.

Galileo's name, meantime, had grown so celebrated that the grand duke Cosmo II., in 1610, appointed him grand ducal mathematician and philosopher, and invited him to become first instructor in mathematics at Pisa, where, however, he was not obliged to reside. He lived sometimes in Florence, and sometimes at the country seat Alle Scive, of his friend Salviati. Here he gained a decisive victory for the Copernican system when he published, in 1611, his v. eleven phases of Mercury, Venus, and Mars; as the motion of these planets about the sun, and their dependence on it for light, were thus established beyond the possibility of doubt. He wrote a work afterwards on the floating and sinking of solid bodies in water, and in this, as well as in all his other writings, he has scattered the seeds of many new doctrines.

While he was thus employed in enlarging the field of natural philosophy, a tremendous storm was gathering about his own head. He had declared himself in favour of the Copernican system, in his work on the sun's spots, and was therefore denounced as a heretic by his enemies, who thought this theory endangered the honour of the Bible. The monks preached against him, and he went to Rome, where he succeeded in appeasing his enemies, by declaring that he would maintain his system no further, either by words or writings. He would hardly, however, have escaped the cruelties of the inquisition, unless the grand duke, suspecting his danger, had recalled him.

In 1618, the appearance of three comets gave him an opportunity to communicate to his friends some revealing proofs of his system. The observant and zealous Robert, Dr. Mario Guiducci, wrote a work immediately after, in which he severely condemned the Jesuit Grassi. Supposing Galileo to be the author, Grassi attacked him. Galileo replied in his Saggiatore, a masterpiece of eloquence, pronounced by Algarotti to be the finest controversial work Italy has ever produced, and, notwithstanding the errors contained in it, a work always worthy to be read. This drew upon him the fury of the Jesuits.

About this time he completed his famous work, in which, without giving his own opinion, he introduces three persons in a dialogue, of whom the first defends, the second attacks, and the third recommends the Copernican system, the second the Ptolemaic, and the third weighs the reasons of both in such a way that the subject seems to remain problematical, though it is impossible to mistake the

* * *
preponderance of arguments in favour of Copernicus. With this immortal work, in which the greatest and most concise statements, Galileo went to Rome, in 1630, and succeeded in obtaining the privilege to print it. Having obtained the same permission in Florence, he published it there in 1632—Dialogo di Galileo Galilei, dove ne' Congressi di quattro Giorni e Mezzi, prese parte lo stesso Galileo, e Scipione Dal Pozzo, con la presenza del signor Domenico Maffei e di altri maestissimi Sistemi, Tolemaico et Copernicano. Scarcely had it appeared, when it was attacked by the disciples of Aristotle, and most violently of all by Scipione Chiaramonti, teacher of philosophy at Pisa. Urban VIII., who, when a private man, had been the friend and admirer of Galileo, now became his severest persecutor. The monks had persuaded him that Galileo, in the person of Simplicio, had intended to ridicule his folly in suffering so offensive a book to be printed. It was no difficult task for his adversaries to inflict upon Galileo the severest treatment, especially as his patron, Cosmo II., was dead, and the government at Florence was in the hands of the young Ferdinand II. A congregation of cardinals, monks, and mathematicians, all sworn enemies of Galileo, examined his work, condemned it as highly dangerous, and summoned him before the tribunal of the inquisition. The veteran philosopher was imprudently detained in Florence. In the month of June, 1633, he languished some months in the prisons of the inquisition, and was finally condemned to renounce, in presence of an assembly of ignorant monks, kneeling before them, with his hand upon the Gospel, the great truths he had maintained. Corde sincerò e fide non fida, abjuro, maledeco ed eto detrato supraditos errores et hereges, was the formula which he was compelled to pronounce. At the moment when he arose, indignant at having sworn in violation of his firm conviction, he exclaimed, stamping his foot, E pur si muove! (Yet it moves!) This happened June 22, 1633. Upon this, he was sentenced to the dungeons of the inquisition for an indefinite time, and every week, for three years, was to repeat the seven penitential psalms of David. His Dialogo was prohibited, and his system condemned as contrary to the Bible. His judges were merciful enough to commute his sentence of imprisonment to banishment to the island of Sardina, where he lived in retirement, after, to the parish of Arceti, not far from Florence.

He employed his last years here principally in the study of mechanics and projectiles. The results are found in two important works on the laws of motion, the foundation of the present system of physics and astronomy. At the same time, he tried to make use of Jupiter's satellites for the calculation of longitudes; and though he brought nothing to perfection in this branch, he was the first who reflected systematically on such a method of fixing geographical longitudes. He was, at this time, afflicted with a disease in his eye, on account of which his vision was wholly blind, and the other eye almost useless, which made the liberation (q. v.) of the moon. Blindness, deafness, want of sleep, and pain in his limbs, united to immitber the last years of Galileo's life. Still his mind was active. "In my darkness," he writes in 1638, "I muse now upon this object of nature, and now upon that, and find it impossible to soothe my restless head, however much I wish it. This perpetual action of mind deprives me almost wholly of sleep." He died 1642 (the year Newton was born), January 8, aged seventy-eight, expiring with a slowly-consumming fever, in the arms of his youngest and most attached scholars, Innocenzo Viviani. His relics were deposited in the church of Sta. Croce, at Florence, where a splendid monument was erected to him near that of Michael Angelo, in 1737.

Galileo was of diminutive size, but strong and healthy. His countenance was agreeable; his conversation, lively. He loved music, painting, and poetry. He knew Ariosto by heart; and, in one of his works, first printed in 1793 (Considerazioni al Tasso), the product of his leisure hours, he betrays his predilection for Tasso, though he often blamed him severely. He had few books. The best book," he says, "is nature, written in a plain, natural, and fluent. A complete edition of his works, in 13 vols., appeared at Milan, 1803. His life was written by Jagemann—History of Galilei (Weimar, 1783). His true character may be learned from Nelli's Vita et Commercio Letterario di Galilei, 2 vols. (Florence, 1821).

GALL, John Joseph; the founder of modern phrenology, was born, in 1758, in Tiefenbrunn, in the kingdom of Wurtemberg, where his father was a shop-keeper. He studied medicine, and lived at Vienna as a physician, where he made himself known to advantage by his Philosophical and Medical Inquiries respecting Nature and Art, in Relation to the Diseased and Healthy State of Men (2 parts, Vienna, 1791). He attracted more attention by his Anatomical and Physiological Inquiries respecting the Brain and Nerves, on account of the many new discoveries and psychological remarks it contained, which had been previously unexplored. Gall had already remarked at school, that some boys, who excelled him, in spite of his efforts, in committing things to memory, were distinguished by large eyes. He remarked the same peculiarity afterwards in great actors. Thence he inferred that the talent (the organ) of memory must reside in this part of the head. He afterwards rejected the idea, but again resumed it, that certain talents actually depend on the formation of certain parts of the head. He afterwards undertook to collect skulls, carefully comparing the prominences common to all, and those which distinguish them from each other. He compared also the skulls of beasts, studied the habits of beasts and men, the formation of their bodies and brain, and thus arrived by degrees to assign the particular locations of twenty organs, or as many different seats of the most prominent operations of the mind. (See Phrenology.) Gall did not at first commit his doctrines to writing. He published, however, verbally, in his travels through the great cities and universities of Germany. He then laboured some years in company with his friend doctor Spurzheim, at Paris, where he delivered lectures, with more or less success, and continued to reside there as a practising physician. His principal merits are his advancement of our knowledge in regard to the anatomy of the brain. He has proved, what before was only conjectured, that the brain begins in the spinal marrow, from thence develops itself in the shape of a net, and divides itself into the great and the small brain (cerebrum and cerebellum). With Spurzheim, he published, in Paris, in 1810, in quarto, Anatomie et Physiologie du Système Nerveux en général, et du Cerveau en particulier. Against the many objections that were made to his views, particularly by the Parisian scholars, he defended himself in his work, Des Dispositions Inées de l'Ame et de l'Esprit, ou du Matérinisme, (Paris, 1812). Spurzheim also published, in London, a work upon his own and Gall's discoveries, which met with severe criticism. A new edition, in six volumes, of Gall's Organologie, ou Exposition des Insepts des Penhans, &c., et du Siège de leurs Organs, was published at Paris, 1855—5. Doctor Gall died in the year 1868.

GALL, in the animal economy; the same with bile. (q. v.)
GALL-Bladder, called vesicula and cystis felles, is usually of the shape of a pear, and the size of a small hen's egg. It is situated on the concave side of the liver, and lies upon the colon, part of which it tinges with bile. It is composed of four, or sometimes more, membranes, or coats—the common, the vesicular, the muscular, and the nervous one, which last is of a wrinkled or reticulated surface within, and furnished with an unctuous liquor. The use of the gall-bladder is to collect the bile secreted in the liver, and, mixing with it its own peculiar parts, to expel it from the liver at a certain time, and then to expel it.

GALL, in natural history, denotes any protuberance or tumour produced by the puncture of insects on plants and trees of different kinds. Galls are of various forms and sizes, and no less different with regard to their internal structure. Some have only one cavity, and others a number of small cells communicating with each other. Some are as hard as the wood of the tree they grow on, others are soft and spongy. The first are termed gall-nuts, and the latter berry-galls or apple-galls. Oak-galls, put into a solution of vitriol in water, give it a purple colour, which, as it grows stronger, becomes black; and on this account is used as the art of making our writing ink and black dyes.

GALL-FLY (cynips, L.). The innumerable and curious excrescences which are seen on the leaves, branches, and roots of trees, are all the productions of different kinds of insects. Some of these excrescences have within a single cavity, in which several insects live together. Others have a number of small cells, with communications between them; others again have numerous distinct cavities. These productions are of various sizes, form, and consistence, some being spongy, and others, like the gall-nut, external. All these gall-forming productions are occasioned by the puncture of insects when depositing their eggs. The ancient opinion concerning the animals found in these receptacles was, that they were spontaneously produced from the rotten wood. Afterwards it was believed that the roots of plants had the power of sucking up, with the sap, the eggs of insects, and that these were animated as soon as they arrived in a proper situation.

There are a multitude of insects which form these excrescences, the principal of which is the cynips. That which attacks the oak is of a burnished brown colour, with black antennae, and chestnut-brown legs and wings. The eggs are placed in small holes bored by the hymenopterous. The species of oak is shrubby, inhabiting Syria and Asia Minor. The excrescences are called gall-nuts. The insect is described and figured, in Olivier's Travels, under the name of diplotrepa gallica tinctoria. Like others of the genus, the female pierces a branch, and deposits an egg in the interior, around which, in the course of a few days, an excrescence is thrown out, affording nourishment to the young insect, and protecting it from external injury until it has attained its full size, when, after having undergone metamorphosis, it penetrates the sides of the excrescence, and comes out into the open world. The oak is composed of four, or more, mercuric (querca infectoria) does not attain a greater height than four or five feet, and usually has very numerous straggling branches. The leaves are oblong, sinuate, macronate-dentate, and smooth on both sides. The acorns are elongated, and sessile or sub-sessile. The oak which is composed of four, or more, acorns is named from its resemblance to a marble, usually round, and studded with protuberances. Those which are gathered before the departure of the insect are most esteemed, and have a bluish colour. The whitish are cheapest, and are sometimes dyed blue, but the deception may be detected by the hole made by the insect in its exit.

Gall-nuts are powerfully astringent, and are frequently employed in medicine, as also in dyeing and inking ink. An infusion is an excellent test of iron. They are imported from Smyrna, Tripoli, and other places, chiefly from Aleppo, to which place they are brought by the Curls from the western bank of the Tigris.

GALL-NUTS. See Gall-fly.

GALL-STONES; calculous concretions frequently formed in the gall-bladder, and sometimes occasioning great pain in their passage through the ducts into the intestine. They are evacuated. Gallstones often occur in the inferior animals, particularly in cows and hogs; but the biliary concretions of these animals have not hitherto been examined with much attention. Soaps have been proposed as solvents for these calculi. The academy of Dijon has published the success of a mixture of essence of turpentine and ether.

GALLAND, ANTHONY, an able Oriental scholar, was born of humble parentage, at Rolrot, in Picardy, in 1646. Colbert employed him to travel on the account of government, and his seal and industry are evinced by several treaties published by him. On his return, he gave an account of the manners and customs of the Mohammedan empire and religion. He was well versed in antiquarian research, and published a learned treatise on medals and coins; but the work by which he is principally known, is his curious collection of Arabic romances, published by him, under the title of the Arabian Nights' Entertainments—a work which has gone through a variety of editions in every language of Europe. His other writings are an Account of the Death of Sultan Osman, and the Coronation of his Successor; a Treatise on Coffee; and a Selection of the most approved Aphorisms and Jests, translated into Greek. Among his other works are found in the Works of Oriental Authors. M. Galland was elected professor of Arabic in the university of Paris, and a member of the academy of inscriptions. His death took place in 1715, while he was engaged on a translation of the Koran, which he did not live to complete.

GALLANTRY. In the times when almost all individuals of the non-labouring classes were either clergymen or warriors, and when chivalry fostered alike valour and devotion to the female sex, it was natural that the same word, gallant, should have received the double meaning of brave, and attentive to the ladies. Besides, the bravest in battle is always the most gentle in goods, and as smalde, and gentle to the respect for ladies, which chivalry cultivated, degenerated more and more into frivolous attentions, the word gallantry, though always retaining the meaning of bravery, also acquired a bad sense. In English, it is often used in the worse signification. In German, however, it means only great attention to ladies, or a desire to please them.

GALLATES; salts formed by the gallic acid with alkaline earths or metallic bases.

GALLEON; formerly a kind of vessels of war, used by the Spaniards and Portuguese, with from three to four decks. They are no longer in use. In other places of the Levant, these vessels were called galleons, in which the Spaniards transported treasure from their American colonies. The merchants engaged in this transportation were called galleonists.

GALLERY, in architecture; a long, narrow room, the width of which is at least three times less than its depth, and in which heavy, ornamental furniture is placed on one side. Corridors (q. v.) are sometimes also called galleries. Galleries are not destined to be occupied as sitting rooms, but for dancing, music, dining on festival occasions; and are generally decorated with pictures in oil or fresco. Galleries have sometimes been built merely to receive collections of
pictures, or to give a painter an opportunity for fresco paintings. Hence a large collection of pictures, even if contained in several adjoining chambers, is called a gallery. The first gallery was established by Verres, the well known spoiler of Sicily. Cicero describes it. It contained, among other beautiful works of art, a statue of Jupiter Oblivis, (the dispenser of favourable winds); the Dana Segestes, a grand and beautiful statue of bronze, veiled, bearing a quiver on her shoulder, holding a bow in her right hand, and a lighted torch in her left; Apollo and Hercules, the works of Myron; a Cupid by the hand of Praxiteles; a Sappho in bronze by Silanion; and the famous flute-player Aspendius. It also contained a splendid collection of vases, paterae, &c., of gold and silver, decorated with costly gems and engraved stones. The pictures were of equal value and rarity, the tapestries embellished with rich borders of gold, and every part of the gallery enriched with all the splendour that art and wealth could bestow. In modern Europe, the gallery founded by Cosmo II., in Florence (q. v.), was long considered as the most distinguished. At present, the galerie du Louvre, at Paris, is the finest in the world, though, in 1815, it was stripped of many works of art, retaken by the different nations from whom they had been plundered.

**GALLERY**; a balcony, projecting from the stern or quarter of a merchantman or man-of-war. A Gallery, in fortification; a covered walk across the ditch of a town; and, as a mine, it is a narrow passage from one part of the mine to another.

**GALLEY**; a kind of low, flat-built vessel, furnished with one deck, and navigated with sails and oars, particularly in the Mediterranean. The largest sort of these vessels, called gallasses, were formerly employed by the Venetians. They were about 160 feet long above, and 135 feet by the keel, 32 feet wide, and 21 feet length of stem-post. They were furnished with three masts, and 32 banks of oars, each bank containing two oars, and every oar being managed by six or seven slaves, who were usually chained to it. In the fore part, they had three small batteries of cannon, viz. two 36-pounders, two 24-pounders, and two 2-pounders. They had also three 18-pounders on each quarter, and carried from 1000 to 1200 men. The galleys next in size to these are called half-galleys, are commonly 150 feet long, 14 feet broad, and 9 or 10 feet deep. They have two masts, which may be struck at pleasure, and are furnished with two large lateen sails, and five pieces of cannon. They have commonly 25 banks of oars, as described above. A size still less than these are called quarter galleys, carrying from 12 to 16 banks of oars. They generally keep close under the shore, but sometimes venture out to sea to perform a summer cruise. In France are 40 galleys for the use of the Mediterranean, the arsenal for which is at Marseilles. These galleys, in France, resemble the hulks of Britain, in which the convicts labour and are confined.

The war galleys of the Romans were called navis longae, because they were of a longer shape than ships of burden, (navis oneraria, B. x.) whales; or arces, banks,) which were more round and deep. The ships of war were driven chisty by oars, the sails of the galleys by the wind, and, as they were more heavy, and sailed more slowly, they were sometimes towed after the war ships. The first ships of war were probably built from the model of those of Anti- lum, which, after the reduction of that place, were brought to Rome in the year of the city 417. It was in honour of the first panic war that they made any figure at sea.

The following cuts represent galleys of war and galleys of merchandise.

**Navis Oneraria.**

Their war galleys were variously named from their rows or ranks of oars. Those which had two rows or tiers were called biremes; three, triremes; four, quadriremes; five, quinqueremes or penteres. It unfortunately happens that no detailed account or explicit evidence has come down to us, whereby the mode in which the banks of oars were arranged might be satisfactorily ascertained; the only source of information being the mere casual allusions of historians and poets, who have naturally avoided to encumber their narration with technical details of construction. Upon Trajan's column, indeed, vessels are sculptured, supposed to be those of two and three banks of oars; but the figures and mechanical proportions upon it are so confused and crowded that nothing can be safely determined from this authority. So also, in the rostrated column of Duilius, erected to commemorate his naval victory over the Carthaginians, and discovered about two centuries and a half ago at Rome, only the banks of galleys are projected from the shaft of the pillar, and no part of the ranks of oars is exhibited. Several paintings of ancient vessels have likewise been discovered in the ruins of Herculaneum, but so much effaced that nothing can be gathered from them to throw any light on the subject. In the absence, therefore, of all direct evidence, recourse has been necessarily had to conjecture.

The form of vessels of one bank of oars may be readily imagined; but the construction of the numerous class of galleys of more than one bank, is a point fruitful of conjectures and perplexities. After stating insuperable objections to the various solutions of these difficulties that have been proposed by Vitruvius, Savile, Melville, and others, Mr. Howell, in his ingenious "Essay on the War Galleys of the Ancients," advances the following theory. After detailing the inconveniences which would be found in the early war galleys of a single arrangement of oars occupying the whole vessel's length, and neither leaving a deck for the soldiers to fight upon, nor admitting of a commanding height whence to discharge their missiles, he proceeds to unfold the idea which, according to his supposition, must have struck the Ephorians, who are generally admitted to have been the first to substitute galleys of two banks for the old ones of a single tier. Suppose a vessel of the original form, pulling twenty oars, ten on each side thus:

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called by various names; as celose, i.e. naves celeres or ceraseria, lembi, phaseli, myoporines, &c. But the most remarkable of these were the naves liburnae, a kind of light galleys used by the Liburni, a people of Dalmatia, addicted to piracy. To ships of this kind Augustus was in a great measure indebted for his victory over Anthony at Actium. Hence, after that time, the name of naves liburnae was given to all light quick-sailing vessels, and few ships were built but of that construction.

Galleys, or, Gally, is also the name of the kitchen of a ship of war, or the place where the grates are put up, fires lighted, and the victuals generally boiled or roasted. In East India ships it is generally termed the cook-room, and on board of merchantsmen, it is called the caleoose.

GALLEY-SLADE; a person condemned to work at the oar on board a galley, being chained to the deck. (See Galley.) Condemnation to the galleys is a punishment whereby criminals and delinquents are adjudged to serve as slaves on board the galleys, either during life, or for a limited time. A man condemned for perpetuity is dead, in a civil sense. He cannot dispose of any of his effects, cannot inherit; and, if he be married, his marriage is null; nor can his widow have any of her dower out of his goods, which, with his lands, are thereby confiscated.

GALLIA. See Gaul.

GALLIC ACID. This acid derives its name from the gall-nut, whence it was first procured by Selleee. It may be obtained by the following process. Digest bruised galls in boiling water, with vellum cuttings, for some hours, then allow the mixture to cool, and filter it. Add to the filtered liquor a solution of acetate of lead, as long as it contains any precipitate, pour the whole upon a filter, wash the precipitate with warm water, and digest it in very dilute sulphuric acid, filter, and, having saturated the clear liquor with chalk, evaporate it to dryness. Introduce the dry mass into a retort placed in a sand-bath, apply heat, and a portion of water will first rise, and afterwards a crystalline sublimate of gallic acid. There are many other processes for obtaining this acid, among which the following deserve notice. Moisten bruised gall-nuts, and expose them four or five weeks to a temperature of about 90°. A mouldy paste is produced, which is boiled to dry, and digested in boiling water. It then affords a solution of gallic acid, which may be whitened by animal charcoal, and which, on evaporation, yields gallic acid crystallized in white needles. Boil an ounce of powdered galls, in sixteen ounces of water, down to eight, and strain it; dissolve two ounces of alum in water, precipitate the alumina by carbounate of potassa, and, after edulcorating it, stir it into the decoction; the next day filter the mixture; wash the precipitate with warm water, till this will no longer blacken sulphate of iron; mix the washing with the filtered liquor, evaporate, and the gallic acid will be obtained in scicular crystals.

The Erythraeans, he imagines, found, that, without adding to the length of the vessel, they could have the same number of oars in nearly one-half of the length, by placing the oars obliquely, thus, up the side of the galley:

\[
\begin{array}{ccccccc}
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
\]

by this means the rowers being all placed in the midships, ample room would be left for an elevated deck for combat at the poop and prow. Thus, then, according to Mr Howell, originated the creation of a bireme; and when this idea was once started, of placing the banks of five oars each obliquely, the extension of the plan was easy to an indefinite degree, simply by adding to the length of the galley, without at all increasing her height. The oar-ports of a trireme would, for instance, appear thus:

\[
\begin{array}{ccccccc}
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
\]

GALLEY—GALLIC ACID.
GALICISM—GALVANI.

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Gallic acid, when pure, is in whitish crystals, of a sour taste, and which exhaile a peculiar smell when heated. It dissolves in about twenty-four parts of water at 60°, and in three parts at 212°. It is also soluble in alcohol and in ether. When repeatedly sublimed, this acid is altered and in part decomposed. It exists, according to Berzelius, of

Hydrogen, 2.09
Carbon, 56.94
Oxygen, 38.96

These proportions give the number sixty-three, as the representative of gallic acid. The combinations of pure gallic acid with metallic bases have scarcely been examined, and consequently we do not accurate chemical history of the gallates. Their solutions are all very prone to decomposition, and acquire a deep brown color. This acid forms no precipitate in solutions of potash or of soda, but when dropped into lime-water, baryta-water, or strontia-water, it occasioned the separation of a difficulty-soluble gallate of those earths. It also causes a precipitate in solutions of zirconia, glucina, and yttria. When an infusion of galls is added to certain metallic solutions, it forms precipitates composed of tannin, gallic acid, and the metallic oxide; and, as these are often of different colors, the precipitation is employed as a test for such metals. Of these compounds, the tannogallate of iron is of the most importance, as forming the basis of writing ink and black dyes. When an infusion of galls is dropped into a solution of sulphate of iron, it produces a deep purple precipitate, which is a very long time in subsiding. It becomes black by exposure to the air. In writing ink, this precipitate is retained in suspension by mucilage, and the following proportions appear the best which can be used:—Finely bruised galls, three ounces; green vitriol (protosulphate of iron), logwood shavings, gum arabic, of each one ounce; vinegar, one quart. Put these ingredients into a bottle, and agitate them occasionally during twelve or fourteen days; then allow the coarser parts to settle, and pour off the ink for use. See Ink.

GALLICISM; an idiom of the French language, employed in an expression, or in the construction of a sentence, in altering to another language.

GALLIMATIAS; nonsense, gibberish. The expression, M. Huet thinks, was occasioned by the name of a French peasant, Mathias (Matthew), who had a lawsuit on account of a cock (in Latin, gallus). His advocate, who argued his case in Latin, agreed by the name of a cock, Yenne, frequently repeated the words gallus Mathias (Matthew's cock); but, getting confounded by the repetition, he used the expression gallus Mathias (the cock's Matthew). As this signified nothing, any unmeaning, absurd expression was afterwards called gallimattias. Perhaps this explanation and etymology is not a bad specimen of gallimattias.

GALLIN, in ornithology; the fifth order of birds, under which are comprehended the peacock, pheasant, turkey, the common cock, partridge, grouse, dodo, &c.

GALLING FIRE; a repeated discharge of cannon, or small arms, which, by its execution, greatly annoys the enemy.

GALLING OF A HORSE'S BACK; a disorder occasioned by heat and the chafing or pinching of the saddle. To prevent it, some persons take a hind's skin, well garnished with hair, and fit it neatly under the crupper of the saddle, so that the hairy side may be next the horse. When a horse's back is galloped upon a journey, take out a little of the stuffing of the pannel, over the swelling, and sew a piece of soft white leather on the inside of the pannel, anoint the part with salt butter, and every evening wipe it clean, rubbing it till it grows soft; wash the swelling or hurt, every evening, with cold water and soap, and strew it with salt, which should be left on till the horse be saddled in the morning, when the part is to be again anointed with butter or grease.

GALLIOT; a Dutch vessel, carrying a main and a mizen mast, and a large galley. A galliot is a sort of a brigantine, or small galley, built very slightly, and designed only for close. She can both sail and row, and usually carries about two or three pederos, and has sixteen or twenty oars. All the seamen on board are soldiers, and each has a musket by him on quelling his own. Some also call the bomb-ketches galliots.

GALLITZIN, AMALIA, princess; a German lady distinguished for talent and a strong propensity to mysticism. She was the daughter of count Schmettau, and lived, during a part of her youth, at the court of the wife of prince Ferdinand, brother of Frederic the Great. She was married to the Russian prince Gallitzin; and, as much of his time was passed in travelling, she chose Munster, in the centre of Germany, for her permanent residence. Here she assembled around her some of the most distinguished men of the age, Hemsterhuis, Himmann, Jacobi, Goethe, and Lehrs. The first two formed her most intimate friends. She was an ardent Catholic, and strongly given to making proselytes. With the exception of her excessive religious zeal, she was an excellent lady in every respect. In the education of her children, she followed Rousseau's system. The princess is the Distima to whom Hemsterhuis, under the name of Dioklas, addressed his work On Atheism. She died, in 1806, near Muster. Her only son was a missionary in America.

GALLON, an English measure of capacity, being equal to four quarts, or eight pints.

Cub. Inches
The old gallon, wine measure, contained 231 ditto, beer measure, . . . . . 282

The new imperial gal. contains 277.274

GALLOON, in commerce; a narrow kind of lace, used to edge or border cloths.

GALLY, in printing; a frame into which the compositor emplaces his line out of his composition book, and in which he ties up the page when it is completed. Some gallies are formed of an oblong square board, with a ledge on three sides, and a groove to admit a false bottom, called a gally-slice.

GALLUPI, BALDASSARO; a musician, called also ii Buranello, from the town of Bologna, where he was born in 1703. He studied at the Conservatorio degli Incorabili. While yet very young, he was a skilful performer on the harpsichord, and gave proofs of a talent for composition. When not twenty years old, he produced his first opera, at Venice, called the Rival Friends, which was unfavourably received; but so rapid was his improvement, that in a short time he got possession of almost all the Italian theatres. He was made chapel-master at St Mark's, organist at several churches, and teacher at the Conservatorio degli Incorabili. At the age of sixty-three, he was appointed first chapel-master at St Peter's church. In 1768, he returned to his family at Venice. He continued his labours until his death, in 1785. His last operas and church music have been thought to surpass his former productions in spirit, taste, and power. His operas, which were about fifty in number, were almost all of the comic kind.

GALVANI, LUIGI, an Italian physician, known as the discoverer of animal electricity, or galvanism, was born at Bologna, Sept. 9, 1737, studied medicine, and, having distinguished himself by a thesis on the nature and formation of the bones, in 1762, he entered
on the practice of his profession. His favourite studies were anatomy and physiology. He soon received the appointment of professor of anatomy in the celebrated institute of his native city, and published an interesting treatise on the urinary vessels of birds. Encouraged by the approbation with which this work was received, he resolved on writing a complete physiology, but he afterwards, after a long period of meditation and research into the organs of hearing. In these pursuits, he was fortunately led to the discovery of several phenomena, which have led to a new branch of science, called, from the discoverer, galvanism. (q. v.) On a journey to Sinagaglia and Rimini, he was struck by the curious appearance of the electric phenomena which are observed in the torpedo, and wrote a learned treatise on this subject. Simple in his manners and wishes, and being naturally inclined to melancholy, he avoided general society. The loss of his beloved wife, in 1790, rendered him inconsolable. As his conscience would not permit him, during his absence, to take the oath required of all public officers, he was deprived of his office. He retired into the country, and died Dec. 4, 1798. In Rome a medal has been struck with his effigy.

GALVANISM. Although this agent is generally believed to be identical with electricity, yet its mode of production, and the laws which it obeys or defies, are so far peculiar, that it is most advantageously treated of by itself. Its name is derived from Galvani (q. v.), an Italian philosopher, who, in a course of experiments on animal irritability, observed the first striking phenomenon which led to its discovery. The origin of galvanism is due to a trivial circumstance. A physician of Bologna had, in 1790, prescribed a dish of dressed frogs to a lady affected with rheumatism in that city. Some of these animals, which had been skinned by one of Galvani's domestics, lay in a dish upon the table, when the accidental discharge of an electric machine upon the table, caused a strong contraction of the muscles of the frogs, although they had not been touched by the spark. Galvani, in varying his experiments, found that the same phenomena of muscular contraction may be produced by interposing one or two plates of metal between a muscle and a nerve, and he was led to conclude, that the muscles of an animal are negatively charged, and the nerves positively charged, and that the effect of the metal is merely to restore the equilibrium. The fallacy of this theory was fully shown, about ten years after, in the year 1800, by Volta, a celebrated professor of natural philosophy at Pavia, who excited similar contractions by making a connexion between two parts of a nerve, between two muscles, or between two parts of the same muscle; but to produce the effect, two different metals were found to be requisite. He showed also, that in a similar way sensations can be excited; as, for example, a piece of silver being applied to one side of the tongue, and a piece of copper to the other, when the tongue is brought into contact, a connexion is established between them by a conductor, a peculiar taste is felt, and often a flash of light appears to pass before the eyes. Hence he was led to infer, that the electricity is derived, not from the living system, but from the action excited between the metal and the fluids. Hence, if we bring the two differently charged metals together, the latter will be deprived of their electricity, and that the effects produced are to be ascribed to the stimulus of the electric fluid passing along the nerves and fibres, as in a shock from a Leyden jar. In the further demonstration of his views of the production of galvanic current, he showed that plates of different metals, such as silver and zinc, or silver and copper, or silver and iron, or any other, are excited, the silver negatively, and the zinc positively; and, by employing several pairs of these plates, connecting them in such a manner that the electricity excited by each pair should be diffused through the whole, he discovered a mode of greatly augmenting the galvanic energy, and presented to chemistry an unrivalled instrument of research. It consisted of any number of pairs of zinc and copper, or zinc and silver plates; each pair being connected with the former ones by pieces of cloth, nearly of the same size as the plates, and moistened in a saturated solution of salt. The relative position of the metals in each pair was the same in the whole series; i.e., if the copper was placed below the zinc in the first combination, the same order was preserved in all the others. The pile, the construction of which will be better understood by the aid of the annexed figure, was contained in a proper frame, formed of glass pillars, fixed into a piece of thick wood, which afforded the apparatus both support and insulation. The instrument thus arranged was found to be in the same state of excitement as the single pair of metallic plates, affecting the electrometer, and exciting muscular contractions in a similar manner, but in a much greater degree. The opposite ends of the pile were also differently excited, the side which began with a zinc plate being positive, and the other negative; and hence, when they were made to communicate by means of a wire from each, electricity flowed from one to the other in a continued current. If the wires were applied to living matter, sensations and contractions were excited: they also gave the electric spark. This instrument, at present rarely used, in consequence of more convenient arrangements upon the same principle, has received the name of the voltaic pile. Another apparatus for the same purpose was invented by Volta, which he called the couronne de toasses. It consisted of a series of glass cups nearly filled with water or a saline solution. In each cup was placed a plate of zinc, and a plate of silver or copper; the plate of silver in the one cup being connected with that zinc in the other, by a thin slip of metal bent into an arc, and the same order being preserved as in the construction of the pile. Several improvements upon the voltaic pile were soon made by other philosophers; and the discoveries in galvanism multiplied with a rapidity, and to an extent, which surpass any thing before known in the history of science. In attempting to give an outline of these discoveries, we shall observe the following order:—1. The construction of the voltaic apparatus, and the circumstances essential to the excitement of this modification of electricity; 2. its electrical effects; 3. its chemical agency; and 4. the theoreticalmode of action for a conductor. 1. The simple contact of different conducting bodies is all that is necessary for the excitement of galvanic electricity. Conductors of electricity (see Electricity) have been divided into perfect and imperfect; the former comprehending the metals, plumbago and charcoal, which are being reduced, and the latter, including water, alcohol, and ether, sulphur, oils, resins, metallic oxides, and compounds of chlorine. The last complicated galvanic arrangement is termed a simple galvanic circle. It consists of three conductors; of which one, at least, must be solid, the second fluid; the third may be either solid or fluid. In the following cases, the anode and different simple circles are arranged in the order of their powers; the most energetic occupying the highest place.
GALVANISM.

Table of Electrical Arrangements, which, by Combination, form Volttic Batteries, composed of two perfect Conductors, and one imperfect Conductor.

<table>
<thead>
<tr>
<th>Material</th>
<th>Each of these</th>
<th>Solution of nitric acid,</th>
<th>Muriatic acid,</th>
<th>Substances in the Positive Pole</th>
<th>Ferrocyanide of Potassa,</th>
<th>Sal-ammoniac,</th>
<th>Nitre,</th>
<th>Other neutral salts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platinum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above Table, consisting of one perfect Conductor and two imperfect Conductors.

<table>
<thead>
<tr>
<th>Solution of sulphuric acid,</th>
<th>Copper,</th>
<th>Nitric acid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potash, or strong alkali</td>
<td>Silver,</td>
<td>Sulphuric acid.</td>
</tr>
<tr>
<td>Potash, or strong alkali</td>
<td>Lead</td>
<td>Muriatic acid.</td>
</tr>
<tr>
<td>Potash, or strong alkali</td>
<td>Any solutions containing acids.</td>
<td></td>
</tr>
<tr>
<td>Potash, or strong alkali</td>
<td>Charcoal</td>
<td></td>
</tr>
</tbody>
</table>

In explanation of these tables, it may be observed, that in all those cases where the fluid menstruum affords oxygen, those metals which have the strongest attraction for oxygen are those which form the positive pole. But when the fluid menstruum affords sulphur to the metals, the metal, which, under the existing circumstances, has the strongest attraction for sulphur, determines the positive pole. Thus, in a series of copper, iron, and zinc, when introduced into a porcelain trough, the cells of which are filled with water or with acid solutions, the iron is positive and the copper negative; but when the cells are filled with a solution of sulphuret of potash, the copper is positive and the iron negative. When one metal only is concerned, the surface opposite the acid is negative, and that in contact with the solution of the alkaline and sulphur, or of its alkaline, is positive.

Simple galvanic circles are possessed of but feeble powers; yet these are often sufficiently obvious, as in the instance above alluded to, of a slip of zinc laid upon the tongue and a piece of silver under it.

In this case, we have an example of the arrangement of two perfect conductors (the metals) with one imperfect one (the tongue, or rather the fluids which it contains). A piece of zinc, immersed in water which is freely exposed to the atmosphere, oxidizes very slowly; but when placed in the same situation, in connection with a piece of silver, its oxidation proceeds much more rapidly. By immersing iron and silver (also in contact with each other) in dilute muriatic acid, the action of the acid upon the iron is considerably increased; and hydrogen gas is evolved from the water, not only where it is in contact with the iron, but where it touches the silver. These facts explain why, in the sheathing of ships, it is necessary to use bolts of the same metal which forms the plates; for if two different metals be employed, they both oxidate very speedily, in consequence of their forming, with the water of the ocean, a simple galvanic circuit.

Compound galvanic circles or galvanic batteries, are formed by multiplying those arrangements which compose simple circles. Thus, if plates of zinc and of silver, and pieces of wooden cloth of the same size as the plates, and moistened with water, be piled upon each other in the order of zinc, silver, cloth; zinc, silver, cloth; and on so, for twenty or more repetitions, we have the voltaic pile, the description of which was given above. The power of such a combination is sufficient to give a smart shock, as may be felt by grasping in the hands, previously moistened, the wires connecting the upper and lower extremities of the pile. The shocks may be renewed at pleasure, until after a few hours, the activity of the pile begins to abate, and finally ceases altogether.

But the galvanic apparatus, by far the most convenient, and generally used, was invented by Mr. Crichtonsk— the galvanic trough, as it is named; and which consists of a long and narrow trough, made of barked wood. Grooves are cut in the trough, opposite to, and at the distance of a half and three quarters of an inch from each other; and into these are let down, and secured by a cement, square plates of zinc and copper, previously united together by soldering. The space, therefore, between each pair of plates, forms a cell for the purpose of containing the liquid by which the combination is to be made active. The plates may be from three to six or eight inches square; and care is to be taken in their arrangement in the trough, that the order in which they are inserted be not in any instance reversed, but that the copper side of each double plate be always towards one hand, and the zinc side towards the other. The galvanic trough, thus constructed, is more easily put in action than the pile, and more easily kept clean; and, besides, it can be continued longer in action, as it contains more liquid, owing to which cause it is also more energetic. For ordinary experiments, a trough containing fifty pairs of plates four inches square is sufficient. In those cases where a greater power is wanted, it may be commanded by uniting the power of several such troughs through the union of the zinc end of one trough with the copper end of another, by a metallic slip or wire. The battery of the royal institution, with which Sir Humphry Davy made his great discoveries, is composed of 2000 pairs of plates, each plate having thirty-two square inches of surface. The following cut represents an improved form of the voltaic battery, the hint for which was derived from the couronne de tasses; it consists in keeping the plates detached, instead of soldering them together. They are connected at the upper edge by a metallic arc, and are introduced into a trough divided into cells by partitions of glass (or sometimes into troughs wholly made of earthenware), in such a manner that one plate is on one side of the partition, the other on the other. This arrangement has the advantage, that both surfaces of each plate being acted on, a greater power is obtained.

Doctor Wollaston has heightened the improvement by placing in each cell one plate of the one metal, as the zinc, and two of the other, the copper, so that each surface of the zinc may be opposed to a surface of copper. The plates of copper are connected by metallic arcs, both at the top and bottom; and between them, supported by pieces of wood, is the plate of zinc, distant an eighth or a fourth of an inch from the copper on each side. The communication between these triple plates is established by arcs of lead or other metal, connecting each central zinc plate with the copper of the adjoining cell. This arrangement is
very powerful in producing light and heat. In a battery formed by Mr. Children, on Dr. Wollaston's plan, each plate was six feet by two feet eight inches, presenting a surface of about thirty-two square feet. The zinc plates were introduced by Mr. Hart, of Glasgow, in the construction of a battery without a trough. He formed his battery of copper cells, each of such capacity within, as to contain a zinc plate, together with so much of the acidulated fluid as would allow the copper to be immersed, nearly to the level of the zinc plates. The zinc plates were suspended in the copper cells by means of brass wires at their tops, which are fixed in a cross bar of baked wood; and each copper cell is made to communicate with the zinc plate in the next cell, by means of a thin slip of copper, each cell communicating only with one zinc plate. The acid solution is introduced into the cells by immersing them in a leaden trough, containing the fluid; when they are taken out, the battery is in action. Another ingenious modification of the battery has been contrived by Dr. Hare of Philadelphia. It consists of concentric coils of copper and zinc, so suspended by beams and levers as to be made to descend at the proper moment. The exciting fluid contained in glass jars or wooden troughs, without partitions. Each coil is formed from a zinc sheet of nine inches by six, and one of copper fourteen by six, more of the copper being required, as this metal is made to commence within the zinc, and completely to surround it without. The sheets are so coiled as to leave between them interstices of a quarter of an inch. In the original apparatus, they were arranged in two rows, forty coils in each: on their immersion in the appropriate fluid, the immediate evolution of heat and light was found to be most intense, far exceeding that of volcanic piles or troughs of an equal number of series and extent of surface; and on account of its superior power of causing the combustion of metallic wires and leaves, the instrument was named, by its inventor, the galvanic deflagrator. - The size of the plates composing the galvanic series has been varied from one or two inches square to that of a great number of feet. The battery of Mr. Children consisted of twenty pairs of copper and zinc plates, each plate being six feet long by two feet eight inches broad. Each pair was connected by leaden straps at the top, and had a separate wooden cell. These cells were capable of containing 945 gallons of liquid. The plates were suspended in wooden beams by means of wires; they could at once be lowered into the cells, and again raised, at pleasure. Doctor Hare constructed an apparatus consisting of twenty sheets of copper and the same number of zinc, each twenty inches square, and so arranged as to be equivalent to a battery of two galvanic pairs, excepting that there is no insulation, all the plates being plunged into one vessel. This instrument, from its evolving caloric with scarcely any electricity, was called by Doctor Hare the calorimoter. Messrs. Wetherell and Peale, of Philadelphia, experimented with still larger pairs in the form of concentric coils; one pair containing nearly an equal foot of each metal, and moving by nearly 100. In the London institution, there is an efficient battery, the energy of which is derived from a simple galvanic circle. The instrument consists of two plates, the one of zinc, and the other of copper, coiled round one cylinder of wood, and kept asunder by a strip of metal of the circuit, which is placed at intervals between the plates. Each plate is two feet broad and sixty long, and when it is required to be put in action, it is only necessary to put the coil endwise into a vessel containing the acid solution.

Different liquids are employed to fill the cavities of the trough; and it is essential to employ those which exert a chemical action upon one of the metals, the effect with pure water being very inconsiderable. In general, the galvanic effect is proportional to the rapidity of the oxidation, or to the chemical action produced upon the intervening fluid. Thus where the liquid employed is pure water, the electric excitement is very feeble, for the action on the metals is feeble; still the zinc is, even in this arrangement, observed to be oxidized more rapidly than it would be, were it not for the quiescence of the metal in the state of muriate of soda, or muriate of ammonia, which is found to cause a more rapid oxidation of the zinc; and, accordingly, the electric power is greater: and, lastly, an acid fluid, which oxygenizes and dissolves the metals much more rapidly, produces the highest activity of which the battery is capable. The fluid generally used is nitric acid, diluted with twenty or thirty times its weight of water. — The electric column, originally contrived by M. de Luc, is usually classed with galvanic arrangements. It is formed of discs of Dutch gilt paper and similar discs of laminated zinc. These, in a perfectly dry state, are piled up into two columns, in order to the exciting fluid, alternating with each other in their position, until they attain the height of eighteen inches, when they are coated over with a glass cylinder. They are then placed at the distance of four or five inches from each other, and between them is suspended, on a pivot, a light steel needle, which is attracted alternately to the one pile and the other, moving between them like a pendulum. This curious instrument, instead of being soon exhausted, like the pile, with humid substances, is found to continue active for several years, and has been applied to the measurement of time, by causing it to give motion to the pendulum of a clock.

2. Electrical Effects of the Galvanic Battery. Under this head are included all the effects which resemble the usual phenomena produced by the electrical machine. Galvanism, even when excited by a single galvanic circle, such as a piece of zinc, a similar one of copper, and a piece of cloth moistened with a solution of muriate of ammonia, distinctly affects the gold leaf of the condensing electrometer. If the zinc end be uppermost, and be connected directly with the instrument, the electricity indicated is positive. If the pin of the electrometer touch the copper, the electricity is negative. When wires of different metals are placed on the sides of an active galvanic trough, are brought near each other, a spark is seen to pass between them, accompanied with a slight snap or report, and, on establishing a communication by means of the hands, previously moistened, a distinct shock is perceived, similar to that which is produced by the discharge of a Leyden jar. Both influences, also, are propagated through a number of persons without any perceptible interval of time. On connecting the ends of a sufficiently powerful battery, by means of fine metallic wires, or slender pieces of freshly prepared charcoal, these conductors become intensely heated, and a vivid light is visible in the charcoal; and as this phenomenon takes place equally in an atmosphere void of oxygen gas, or even under the surface of water, it manifestly cannot be ascribed to combustion. If the communication be established by metallic leaves, the metals burn with vivid scintillations; and a piece of gunpowder, horsehair, or cotton, be made to pass through gunpowder, phosphorus, and a mixture of hydrogen and oxygen gases, they are inflamed. These observations induced the belief, that the agent or power excited by the voltaic apparatus is identical with that which is called into activity by the electrical machine; for not only all the
common electrical experiments be performed by means of galvanism, but it has been shown by doctor Wollaston, that the chemical effects of the galvanic battery may be produced by electricity. The conditions required for producing the electrical effects of the voltaic battery are different from those which produce attraction and repulsion, and the affected particles are in no way brought to an equal state of excitation, as they are found to be; in fact, the electric fluid is different in different parts of the same battery. By placing the metallic plates near each other, they are found to be quite pure, and in the exact proportion of two measures of hydrogen to one of oxygen. If wires of a more oxidizable metal are employed, the hydrogen gas will appear as usual, but the oxygen, instead of escaping, combines with the metal, converting it into oxide. Many other compounds, such as acids and salts, are found to be decomposable in the same manner, one of these elements appearing at one side of the battery, and the other at the opposite extremity.

A remarkable law in the circumstances attending the decomposition is also observed. Thus, in decomposing water or any other compound, the same constituent principle is always disengaged at the same side of the battery; so that the principles which collect around each pole have a certain analogy; inflammable bodies, alcalies, and earths go to the positive pole; metals, and negative materials, to the negative pole of the opposite side. It is also found, that not only are the elements of a compound fluid separated by galvanic energy to the opposite wires in distant parts of the containing vessel, without the movement of these elements being perceptible, but that the elements may even be evolved in separate portions of the fluid placed in distinct vessels, and connected only by some slight link, as a few fibres of moist cotton or amanthis. Thus two glasses may be filled with pure water, and connected with moistened thread; the positive wire immersed in the water in one vessel, and the negative in that of the other; and immediately oxygen gas will be disengaged at the extremity of the former, and hydrogen gas at the extremity of the latter. Now, in this instance, it is obvious a difficulty immediately presents itself in attempting to account for the separate evolution of the elements. If they were both produced in one vessel, it might be conceived that they arose from the decomposition of one portion of water, and had been attracted to the opposite poles. But how can this happen in separate vessels. What becomes of the hydrogen in the vessel where the positive wire is placed, and why does oxygen not appear in the other vessel, in which the negative is one? Is it possible that a distinct operation that can be given, is to suppose that one or both of these ingredients must have passed from one vessel to the other, along the connecting fibres of thread, although we are unable to perceive such a transmission.

Numerous other facts of a similar nature are also now known, particularly with respect to the decomposition of saline solutions. Thus, let two cups of agate or gold (as glass is liable to be acted upon) be connected by a few fibres of amanthis moistened by water, and a solution of sulphate of soda or of potash, nitrate of potash, nitrate of silver, or any other compound salt, be placed in each of the cups. Now, if we introduce into one the positive wire, and into the other the negative wire, of a galvanic battery in action, in a short time the principles of the salt will be separated, and all the acid will be collected in the vessel with the positive wire, and all the base in the other; each being conveyed by the medium of the moistened amanthis, and as it would appear, in opposite currents, passing one another in so narrow a space, without combining or otherwise interfering with each other's movements. Again, if the solution be the same, but in cups, and distilled water in the other, and the positive wire inserted in the latter, the acid will leave both
the base with which it was united and the vessel in which it was, and pass by the anionium wholly into the water, the base remaining in the first cup: and if, after this change be effected, the wires are reversed, the acid will immediately begin to quit the cup into which it has been conveyed by the influence of the electric current through solutions of substances, on which, under other circumstances, they would have exerted an immediate and powerful chemical action, without any such effect being produced. Acids, for example, may be transmitted from one cup, connected with the negative pole, to another cup on the opposite or positive side, through a portion of fluid in an intermediate cup tinged with any of the vegetable coloured infusions, which are instantly reddened by the presence of an acid, without occasioning the slightest change of colour. The same happens also with alkalies. Sir H. Davy found that when three vessels were connected with each other by means and there was placed in the first a solution of sulphate of potash, with a wire from the negative side, in the middle a vessel with a solution of ammonia (a substance having a strong attraction for sulphuric acid), and in the third, water, with a wire from the positive side of the galvanic battery—in five minutes (a battery of 150 pairs of plates being employed) acid was found collecting around the wire in the water. It had, therefore, passed through the ammonia, without the affinity of this being sufficient to arrest it. When the disposition was reversed, and the saline solution connected with the positive side, the water with the negative, and an acid placed in the middle, the alkaline base was conveyed through the interposed acid, and collected in the pure water. The same results were obtained in operating on a number of other salts, alkaline, earthy, and metallic. Where a strong force of cohesion, however, interfered, the substance was intercepted: thus sulphuric acid could not be transmitted through a solution of strong caustic soda; nor these earths through sulphuric acid: when it was attempted, these earths fell down in insoluble precipitates. Not only liquids, but solid substances are decomposed by means of the galvanic energy, and their elements transferred to the opposite wires. And such is the force of this agent, that the most minute portion of a substance thus acted on by either of the wires is collected around it. Portions of muriatic acid, of soda, and of other alkalies and acids, appear at the opposite poles, even when distilled water alone is employed, proving that these substances, in the condition of neutral salts, exist in all waters, however purified they may be by art.

From these researches, the general law is established, that when compounds are placed in the galvanic circuit, their elements are separated from the state of combination in which they exist, and, according to their peculiar nature, are collected,—some from the positive, others around the negative pole. How this is effected, whether by attractions alone exerted at each pole, or by repulsions, or by both, the element attracted to the one being repelled from the other, is not so apparent.

Grotthus, in explaining the galvanic decompositions, has advanced the conjecture, that as, in the volcanic pile, each pair of plates, as its negative and positive poles, it may establish a similar polarity among the elementary particles of the portion of water interposed between its principal poles. One element of the water may thus acquire the positive, the other the negative state; and if this happens, then, according to the laws of electricity, that which has become negative (the oxygen in the case of water) will be repelled from the negative and attracted to the positive pole, whereas that which has become positive (the hydrogen) will be repelled from the positive and attracted to the negative side. This explanation is extremely probable. With regard to the mode of conveyance, it may be by successive decompositions and recompositions of the compound between the two poles; in water, for instance, the water may at intervals be at least partially decomposed; the one element may be disengaged, and the residual element may attract a corresponding portion of the other from the next particle, and thus, by a series of successive decompositions and recompositions, each may be brought to the wire to which it is attracted and evolved; or, what is equally possible, the decomposition may be confined to the particles at each pole, and the element receiving the opposite electricity may be repelled from it, and, by this repulsion and the corresponding attraction at the opposite wire, be brought to that other pole; and analogy is in favour of this supposition. In atmospheric air, which contains both elements, the positively electrical, are attracted and repelled at considerable distances. From the degree in which electricity exists in galvanic arrangements, water is a medium, with regard to it, nearly as atmospheric air is to electricity evolved in the common electrical machine; and it may therefore allow electric attractions and repulsions to operate in a similar manner.

A different theory has been proposed by Sir H. Davy, and which has received the appellation of the electro-chemical theory. It has been adopted by some eminent philosophers, and among others by Berzelius. He conceived that bodies possess natural electric energies, which are inherent in them, whether they are in a state of combination or not. Oxygen, chlorine, iodine, and acids, according to the theory, are naturally negative; while inflammables, as hydrogen, sulphur, &c., and metals, are naturally positive. Hence, when the combinations of these different substances are broken, the elements of the substances are evolved in the electric state natural to them; and as it is a law of electricity, that bodies in opposite states attract each other, the oxygen, being negative, is immediately attracted by the positive wire, while the inflammable or metallic base, being naturally positive, is attracted by the negative wire. In this way, the uniform appearances of these bodies at their particular poles, is accounted for. To explain how combination is subverted by the electric influence, a further hypothesis is suggested by the author of the theory, viz., that chemical attraction may itself be a modification of electricity; that the same power which communicates attractive and repulsive properties to masses of matter, may, when acting upon the ultimate particles of different bodies, induce them either to separate or unite, as their natural electrical states are the same or different. Thus, if hydrogen is naturally positive, and oxygen naturally negative, according to the laws of electricity, they must attract each other; and if these opposite states are sufficiently excited to give them an attractive force, superior to the power of aggregation, they may be expected to combine; and in like manner, other bodies, whose particles are in different states, may from this source find an attraction for each other. If a body also, whose electrical energy exceeds that of one of the substances combined, be brought to act upon these, it may expel that ingredient, and take its place; and this may be the cause of what is
to protect the copper sheathings of ships from corrosion. It is well known that the copper sheathing of vessels oxidises very rapidly in sea water, and, consequently, wears with such rapidity as to demand frequent renewal. Sir H. Davy observed that the copper derived its oxygen from atmospheric air dissolved in the water, and that the oxide of copper then took muriatic acid from the soda and magnesia, forming with it a sub-muriate of the oxide of copper. Now, if the copper did not oxide, it could not combine with muriatic acid; and, according to Sir H. Davy, it only combines with oxygen, because, by contact with that body, it is rendered positively electrical. If, therefore, the copper could by any means be made negative, then the copper and oxygen would have no tendency to unite. The object, then, was to render copper permanently negative. Now this is done by bringing copper in contact with zinc or iron; for the former then becomes negative, and the latter positive. Acting on this reasoning, it was found that the oxidation of the copper might be completely prevented. A piece of zinc as large as a pea or the head of a small round nail, was found fully adequate to preserve forty or fifty square inches of copper; and this wherever it was placed, or under whatever form it was used. Every side and every surface of the copper remained bright, whilst the zinc was acted upon, and the iron or the zinc was slowly consumed. Unhappily for the application of this principle in practice, it is found that unless a certain degree of corrosion takes place in the copper, its surface becomes foul, from the adhesion of seaweeds and shellfish. It is possible, however, that, by duly adjusting the proportion of iron and copper, a certain degree of corrosion may be allowed to occur, sufficient to prevent the adhesion of foreign bodies, and yet materially retarding the waste of the copper.

A more successful application of these principles has been suggested by Mr Pepys, which is to preserve iron or steel instruments from rust by contact with a piece of zinc. The iron or steel is thereby rendered negative, while the zinc, being positive, oxidizes with increased rapidity.

It is to the electro-chemical theory, also, that chemistry owes the most philosophical arrangement of which it appears capable. By it bodies are divided into groups, according to their natural electric energies are the same or different. The electric energies are ascertained by exposing compounds to the action of a galvanic battery, and observing the pole at which the elements appear. Those that collect around the positive pole are said to have a negative electric energy; and those are considered positive electricities, which are attracted towards the negative pole. The following list, showing the electric energy of the different elementary substances in relation to each other, is taken from Berzelius's System of Chemistry. They are given by their author as an approximation to their true order, rather than as rigidly exact. All bodies enumerated in the first row are negative to those of the second. In the first column, each substance is negative to those below it; and in the second, each element is positive, compared with the subsequent ones.

### Negative Electric

- Oxygen
- Sulphur
- Nitrogen
- Chlorine
- Indium
- Fluorine
- Phosphorus
- Selenium
- Arsenic
- Chromium
- Molybdenum
- Tungsten

### Positive Electric

- Potassium
- Sodium
- Lithium
- Barium
- Strontium
- Calcium
- Magnesium
- Beryllium
- Yttrium
- Aluminium
- Zirconium
- Manganese
Before concluding this part of the subject, it should be remarked, that in the production of the different effects arising from the operation of galvanism, a different law is observed with regard to each of these effects, according as the structure of the galvanic arrangement varies. Thus, a few metallic plates, of a surface with two or three square feet, will be powerful in producing heat and light, and will therefore deface metallic leaves, placed in the circuit, and illuminate charcoal points vividly; but the battery which they form will display little power of electrical attraction and repulsion, will have comparatively little effect on sentient organs, scarcely producing any shock, and will act feebly in producing chemical decomposition. Thus the great battery of Mr Children and the deflagrator of Dr Hare, which melted many feet of platina with ease, had no very remarkable power in effecting decomposition, or in giving shocks. If the same amount of surface, however, as existed in either of these arrangements, had been disposed in a battery, so as to have formed four times the number of plates, it would have been that the burning effect would have been diminished, while it would have exhibited more evidently different electrical states, and been more powerful in exciting sensations in animal organs and effecting chemical decompositions.

4. Theory of Galvanism. The various attempts which have at different times been made to explain the phenomena of galvanism, by the application of the laws which are known to govern those of ordinary electricity, have, on the whole, been attended with little success; and the theory of this branch of philosophy still remains involved in considerable uncertainty. We do not yet understand the nature of that force which originally disparity the electrical condition of the different parts of the voltaic apparatus, and constitutes the primary source of galvanic power.

Volta conceived that it proceeds solely from the contact of the metals—i.e., the interposed solutions operating merely as conductors, by means of which the electricity developed by each pair of plates is conveyed from one part of the apparatus to the other. But in proportion as a more extensive acquaintance with the phenomena afforded the means of a more accurate analysis, the insufficiency of this, which was termed the electrical theory, became more apparent; and it is now regarded as fully established, that the primary agent in the evolution of electricity, is the force of chemical attraction. This latter view of the subject has led to what may be called the chemical theory of galvanism. The basis of this theory depends upon the following facts, namely: That no sensible effects are produced by a combination formed of substances which have no chemical action on each other; that the action of the pile is always accompanied by the oxidation of the zinc, and that the energy of the pile in producing chemical decompositions and other galvanic effects is in some proportion to the activity of the chemical action within the apparatus itself. To this theory it may be objected that the mere contact of substances, without any chemical change whatever, is adequate to the excitement of electricity; and that galvanism, to an extent capable of decomposing water, may be excited by a galvanic combination in which no chemical change occurs. The third theory, and which was proposed by Sir H. Davy, is intermediate between the two others. It, in some measure, removes the difficulties peculiar to each, by attributing the galvanic excitation to the combined influence of the electro-motive power of the metals, and the electrical condition of the liquid. The commencement of the process, it is conceived, is that the zinc and copper plates, by their contact, break the electric equilibrium, in the manner supposed by Volta; and, in consequence, the one metal becomes positive and the other negative. All the zinc plates in this series thus become, at the same moment, positively electrified, and all the copper ones negative; and by means of the conducting fluid with which the cells are filled, the electricity accumulates on one side of the battery, and the other becomes as strongly negative. But the quantity of electricity thus excited would be insufficient, as is maintained, for causing an electrical action. Thus, the electric equilibrium of each pair of plates must be restored as soon as it is disturbed, in order that they may be enabled to furnish an additional supply of electricity. The chemical substances of the solution are supposed to effect that object in the following manner:—The negative ingredients of the liquid, such as oxygen and the acids, pass over to the zinc, while the hydrogen and the alkalies, which are positive, go to the copper; in consequence of which both the metals are for the moment restored to their natural condition. But as the contact between them continues, the equilibrium is no sooner restored, the zinc is again disturbed and when, by a continuous series of chemical changes, the zinc and copper recover their natural state, electricity is again developed by a continuance of the same condition by which it was excited in the first place. In this way the theory explains why chemical action, though not essential to the first development of electricity, is nevertheless necessary for enabling the voltaic apparatus to act with energy. This theory may be regarded as more probable than either of the former. The chief difficulty which is attached to it, is in explaining how the elements come to be evolved in opposite electrical states; for it has already been remarked, that the repulsion of two bodies of like electricity, when insulated or combined, in peculiar electric states, is a mere assumption. For the effects of galvanism, on the magnet, see Electro-Magnetism.

We have thus concluded our view of what may be regarded as the present state of this important branch of science; but from the results which have been obtained by recent experiments, it is reasonable to infer that our knowledge on this subject will, ere long, be greatly enlarged. The late researches of Mr Faraday, as well as some of the continental philosophers, justify such expectations, and in order to furnish our readers with an account of the most recent discoveries in galvanism, which have been obtained, will be again resumed in our article Voltaic Electricity.

GAMA, Vasco de, born at Sines, a small seaport of Portugal, of a noble family, discovered the route to the East Indies by sea—a discovery of the greatest importance, not only in regard to commerce, but to the civilization and political relations of Europe and which is in a large measure the commercial power of Portugal in the Indian seas. As soon as the pupil of Henry the Navigator, Emanuel the Fortunate, had ascended the throne, he determined to carry into execution the project of sailing to India round the cape of Good Hope (discovered in 1486.
by Barth. Diaz), for which great preparations had been already made by his predecessor, Alfonso I. By his command, four vessels, manned with 160 marines and sailors, were fitted out, and Gama intrusted with the chief command. Emanuel solemnly delivered to him the flag, which he was to take with him, with the cross of the order of Christ (of which Henry the Navigator had been grand-master) embroidered on it. July 9, 1497, Gama set sail in the admiral-ship, which bore the name of St. Gabriel. His brother Paul had the command of the second, and Nicolaus Coelho of the third armed ship. The fourth vessel, a barge with provisions, was commanded by Goncalo Nuño. On October 6, Gama doubled the cape of Good Hope. In the beginning of the year 1498, he reached the eastern coast of Africa, and March 1, entered the harbour of Mozambique, where his crew were in great danger, on account of the hostility of the inhabitants to Christians. His guns saved him. In Mombasa, he met with similar enmity. His reception by the king of Melinda was more friendly. He gave the admiral a Mohammedan from Guzerat, skilled in navigation, and an experienced pilot. Holding his course straight towards the coast of Malabar, Gama arrived in May (i.e., the beginning of winter in those regions), and after a long stay on the island of Melilla, where the ruler over the country, called the zamorin (i.e., chief king or emperor), had his residence, Gama, on his arrival, was favourably received; but the Mohammedan merchants, who visited Calicut, prompted by motives of commercial jealousy, found means to disturb this amicable understanding. Gama, however, restored it by his resolution and prudence. The zamorin afterwards sent the admiral a letter for king Emanuel. Gama took several Indians with him, in order to give these people an idea of his native country. On his way homeward, he again visited the king of Melinda. Nicolaus Coelho, sailing before the other vessels, first reached the harbour of Lisbon, where Gama arrived soon after. His brother Paul, who died on the voyage, he had buried in the island of Tercera. His voyage lasted two years and two months. Of 160 men, only fifty-five returned with him.

In Lisbon, after a stay of several days, he spent a week in pious exercises in the convent, which had been built by the infant Henry. The king sent some of the first officers of his court to salute him, and, when Vasco made his solemn entrance into the city, public festivals were celebrated in honour of him. Emanuel, after having given all the companionship of the bold navigator. Vasco received for himself and his descendants the title of don, and the dignity of admiral of the Eastern seas, with an income of 3000 ducats; he was permitted to add part of the arms of the kingdom to his family coat of arms, and, on every voyage to the Indies, to employ 200,000 crusados on his own account. On his return, the king also bestowed on him the dignity of count of Vidigueira. The result of this expedition promised such great advantages, that all those who had been opposed to voyages of discovery changed their opinion. Not long after Gama's return, king Emanuel sent a squadron of thirteen sail to the Indies, under the command of Pedro Alvarez Cabrál. Alliances and commercial treaties were concluded with the Indian princes, and Cabrál's squadron, as well as a lesser one under the command of Juan Coelho, returned to Portugal with rich cargoes. The greatest glory after his return belonged to the Indies, which was kindled among all classes of the nation, and the harbour of Lisbon was crowded with foreign vessels, to obtain the merchandise of the East.

In the year 1502, the king again fitted out a squadron consisting of twenty large ships, with which Gama set sail the second time for the Indies. Having forced the hostile king of Quiloa to pay tribute to the crown of Portugal, he took his course towards the Indian coast, where he confirmed the treaty with the kings of Cannanor and Cochin, which had been concluded by Cabral. Both kings were enemies of the zamorin, who, since Gama's first voyage, had treated the Portuguese as a hostile nation. Forty Portuguese had been killed in Calicut, during Cabral's stay in India, by the inhabitants, who, incited by the intrigues of the Mohammedans, had taken the factory of the strangers by assault. Gama now resolved to punish the zamorin. He appeared on the coast of Calicut, and, paying no regard to the peacable proposals of the terrified king, made an attack on the ships that lay in the harbour, and ordered the city to be bombarded. His cannon carried terror and destruction into the city. At the same time, he hung up thirty Arabs, who had been made prisoners, at the yard-arms, and sent their heads, hands, and feet to the king. He then paid a visit with his squadron to his ally, the king of Cochin; where he received a deputation from the Christians of St Thomas, so called (see Christians of St Thomas), who lived in the neighbourhood, and who solicited his protection against the custom of abrading of rank, accompanied by two of his relations, presented himself before him, expressing a wish to accompany him to Portugal, that he might be instructed in the Christian religion. Some days after, this person succeeded in persuading him, that the differences between the Portuguese and the zamorin might be settled by his mediation. Gama was the more easily imposed upon, as the bramin surrendered to him his son and nephew, as pledges of his sincerity. Committing the command of the squadron to an approved officer, he sailed with the largest of his ships and a caravel, to Calicut, hoping to join, on the voyage, Vincent Sodre, who had escorted the deputies of the Indian Christians home. It soon became evident, however, that the bramin had deceived him; but here also his resolution saved him. He punished the treachery of the bramin, returned to Cochin, and, after having received other aid, sailed with ten ships, to Cannanor. Here he was attacked by the squadron of the king of Calicut, consisting of twenty-nine ships. After a short engagement, Gama put them to flight. Among the rich booty found in the vessels that had fallen into the power of the Portuguese, there was a gold idol of especial interest, weighing more than thirty pounds. Gama then set out on his return to Lisbon, where he arrived with rich cargoes. At his solemn entrance, a vessel of silver, containing the tribute of the king of Quiloa, was carried before him, out of which king Emanuel ordered a costly pyx to be made, which he presented to the convent at Braga (Bethlehem), built by him instead of the little chapel that had been erected by Henry the Navigator, in order to render the memory of the great discoverer immortal. Francisco de Almeida and the great Albuquerque had gloriously confirmed the power of Portugal in India, when Gama was sent the third time to the theatre of his renown by Emanuel's successor, John III. He was authorized to assume the administration of the new colonies, which already extended from the Persian gulf to the Moluccas, with the title of viceroy. In 1524, he left the harbour of Lisbon, with fourteen vessels. Immediately after his arrival in India, he substituted his colo- nies, using all means in his power for their defence and the preservation of the authority of the Portuguese arms among the natives; but he had scarcely administered his office for the space of three months,
GAMBIA—GAMMUT.

hunt, from time immemorial, the distinction has been made. One ostensible reason in favour of these laws is the prevention of game. This object, however, can be sufficiently secured by giving all the subjects an equal right to kill game at certain seasons of the year, and prohibiting every one from destroying it at certain other periods. Such laws have been enacted, in respect to certain game, in some of the United States. In New Hampshire, for instance, there is a penalty for shooting certain birds, or killing deer, or taking certain kinds of fish in certain months of the year; and sportsmen, having the same interest with the rest of the community in their preservation, vigilantly watch the execution of these laws. These laws are not liable to the odium and reproach of the English game laws. The English game laws really make a very considerable code, the enforcement of which is watched and maintained by the game-keepers, appointed in all parts of the kingdom by the lords of manors. By the statute of 25 Geo. III., no person can kill game until he has given in his name to the clerk of the peace, or other officer, and obtained a certificate of his qualifications. The penalties for a violation of these laws are extremely severe. Destroying conies is punished by transportation by 5 Geo. III., c. 14; robbing warrens was made felony by 9 Geo. 1; killing conies in the night, or attempting to kill them, is punished by a fine of forty shillings, by 22 and 23 Charles II., c. 25; stalking deer without permission, by a fine of £10, by 19 Henry VII., c. 11; hunting or killing them, by a fine of £10, and bonds to keep the peace, by 5 Elizabeth, c. 21; engines for the destruction of game kept by unqualified persons, are liable to be seized, under 3 James 1., c. 13; selling such engines, by a fine of forty shillings, under 3 James 1., c. 27; and these penalties, under the statutes of William III., George I., and George II., are increased, and the laws made more severe.

GAMES, in antiquity, were public diversions, exhibited on solemn occasions. Such, among the Greeks, were the Olympic, Pythian, Nemeian, &c. games; and among the Romans, the Apollonian, Circensian, Capitoline, &c. games. The Romans laid three sorts of games, viz. sacred, honorary, and licentious. The first were instituted in honour of some deity or hero; of which kind were those already mentioned; to the second, the Roman gladiators, &c. The second were exhibited by private persons to please the people; as, the combats of gladiators, the scenic games, and other amorphithetical sports. The licentious games were much of the same nature with the games of exercise and hazard among us; such were the ludus Trojanae, tessera, tali, trochus, &c. See Olympic, Pythian, Nemean, &c. Games; also, Circus, Games of Gaming. See Sports, unlawful.

GAMILLA; a Swedish word, which appears in several geographical names, signifying ancient, as Gamla Carleby, Ancient Caroline.

GAMUT. Two musical notes, or a scale laid down to the table of scale laid down by Guido, to the notes of which he applied the monosyllables ut, re, mi, fa, sol, la. Having added a note below the proslambamos, or lowest tone of the ancients, he adopted for its sign the gamma of the Greek alphabet; and hence his scale was afterwards called gammut. This gammut must consist of two notes more and one less than the number of semitones would justify any exclusive privileges which could be granted to a part of the subjects of a government in preference to others, the property of every thing being, in theory, in the government. But this is, in fact, not a question of legal right, but one of fact, because it is a fact, and it is by no means a satisfactory reason for continuing a privilege to some, and continuing to deprive others of it,
GANG — GANNET.

lowest note of the Guidonian or common compass.

GANG; a select number of a ship's crew, appointed on any particular service, and commanded by an officer suitable to the occasion.

GANGA; a Sanscrit word, meaning river. Hence the Ganges is called so by way of excellence.

GANGA, the river Indus, is considered in several creeds or steps nailed to it, for the convenience of walking into or out of a boat upon the shore, where the water is not deep enough to float the boat close to the landing place.

GANGES (called by the natives Ganga, i.e., the river); one of the greatest rivers of Asia, which arises from the south side of the Himalaya mountains, between lon. 78° and 79° E.; lat. 31° and 38° N. After flowing through Serinagar, it is joined, in lat. 30° 9' N., by the Alcamanda. Pursuing a course of thirty or forty miles further, it issues from the mountains of Hurdwar. At Allahabad it is joined by the large river Jumna, and this junction forms the most venerated place of Hindoo ablation. It afterwards receives the Goomty, Gogra, Sonne, Bagmutty, Gundick, Coosy, Teesta, and numerous smaller rivers. It divides into numerous branches, called the mouths of the Ganges, which flow into the bay of Bengal, between lon. 88° and 91° E.; lat. 21° 40' and 29° 30'. The main branch, which receives the great river Barrampooter about forty miles above the bay of Bengal. Its general course is south-easterly; its length, upwards of 1600 miles: at 500 miles from its mouth, it is four miles wide and sixty feet deep in the rainy season, and thirty feet deep in the dry. Its descent is computed at four inches per mile; its motion in the dry season is less than three miles an hour; in the wet season, five or six, and in particular circumstances and situations, seven or eight. It is supposed to discharge, on an average, throughout the year, 150,000 cubic feet of water in a second. The Ganges, like the Nile, has a very wide delta, extending east and west about 200 miles, and commencing about 200 miles, or 300 by the course of the river, from the sea, and intersected by numerous branches. A part of it is an uninhabited country, called Sunderbunds, overgrown with forests and infested with tigers. The westernmost branch, called the Bay of Bengal, between lat. 8° and 12° N. and Jellingby, is the only branch commonly navigated by ships. The country through which it flows, except the Sunderbunds, is healthy, and the water salubrious, and highly esteemed by the natives. Some of the principal cities on this river and its branches are Calcutta, Dacca, Moorshedabad, Patna, Benares, Allahabad, Lucknow, Agra, and Delhi.

It is an imperative duty of the Hindoos to bathe in the Ganges, or, at least, to wash themselves with its waters, and to distribute alms on certain days. The Hindoos believe that this river rises immediately from the feet of Brahma, and that it possesses great miraculous powers. It is the sacred river of its divine origin. Whoever dies on its banks, and drinks of its waters before his death, is thought to be exempted from the necessity of returning into this world, and commencing a new life. Whenever, therefore, a sick person has been given over by the physicians, his relations hasten to the Ganges. In Bengal and the省教育 through order that he may drink of the holy water, or be immersed in the river. Such as live too far from the river to admit of this, always preserve some of the precious water, as a sacred treasure, in a copper vessel, that it may be given them in the hour of death. This water is deemed four cubits of the full capacity of commerce in India. It is also customary, after the dead have been buried, to preserve the remains of the bones, and the ashes, until an opportunity offers of throwing them into the Ganges. That line of the Ganges which lies between Gangotree and Sager island, below Calcutta, is held particularly sacred. Wherever the river runs from south to north, contrary to its usual direction, and wherever it joins other rivers, it acquires a more peculiar sanctity. In the British courts of justice, the water of the Ganges is used in the Libel, or for annulling Harlot's, as the Bible is for Christians. See Asia and Hindoos.

GANGRENE is a great and dangerous degree of inflammation, wherein the parts begin to die in a state of mortification.

GANGWAY; a narrow platform, or range of planks, laid horizontally along the upper part of a ship's side, from the quarter-deck to the forecastle, peculiar to ships that are deep waisted, for the convenience of walking more expeditiously fore and aft, than by descending into the waist. It is fenced on the outside by iron stanchions, and ropes or rails, and, in vessels of war, with a netting, in which part of the hammocks are stowed. In merchant ships, it is frequently called the gangboard.

Gangway is also that part of a ship's side, both within and without, by which persons enter and depart. It is provided with a sufficient number of steps, or cleats, nailed upon the ship's side, nearly as low as the surface of the water, and sometimes furnished with a framework, resembling a flight of stairs, projecting from the ship's side, and secured by iron braces.

Gangway is also used to signify a narrow passage left in the hold, when a ship is laden, in order to enter any particular place as occasion may require, whether to examine the situation of the provisions or cargo, to discover and stop a leak, or to bring out any article that is wanted.

Finally, gangway implies a thoroughfare, or narrow passage of any kind:

To bring to the Gangway; a phrase signifying to punish a seaman, by setting him up, and flogging him with a cat-o'-nine-tails.

GANNET (sula, Brisson). This bird is about three feet in length, and six in breadth from tip to tip; the whole plumage is of a dirty white, inclining to gray. The eyes are of a pale yellow, and surrounded with a naked skin, of a fine blue colour. The bill is about four inches long, and furnished beneath with a kind of pouch, like that of the pelicans, with which birds the gannet was classed by Linnaeus. The gannets are birds of passage, appearing in Great Britain in the summer, arriving about March, and departing in August or September. They principally feed on herrings; and hence it is probable, that their arrival and departure are influenced by the motions of these fish, as they are constantly seen attending them during the whole circuit of these fish round the British islands. They migrate to the southward in the winter, and appear on the coast of Portugal. In the breeding season, these birds retire to the plod peppers, and are found in immense numbers in the Orkneys, and on the Bass rock in the firth of Forth. These dreary precipes are almost covered, during May and June, with nests, eggs, and young birds. Pennant says that the numbers of these birds that fly around their future homes, are so vast as to cover the sky beneath with a cloud of dust, and shut out the sun from view. These nests are generally formed near sea-woods. The female lays only one egg, though, if it be removed, she will deposit another. The egg is generally much darker than the old birds. They remain in the nest until they have nearly attained their full size, becoming extremely fat. In this state they are much esteemed,
though their flesh is strong and fishy. In St Kilda, they form the principal food of the inhabitants; Martin states that no less than 22,000 are consumed annually. The taking of these birds is done by ropes let down by a rope from the top of the precipices, and thus hung suspended at very great heights. They are in peril, not only from the insecure footing of those who hold the rope, but also from the dislocated necks of the birds that are caught in the rope. When the person thus suspended has beaten down all the birds within his reach, he is raised and lowered as occasion requires; and when he has completely destroyed all in one quarter, he is removed to another. Both the eggs and birds are preserved in small pyramidal stone buildings, covered with ashes, to protect them from moisture.

GANTLOPE, or GAUNTLOPE (vulgurly pronounced gantlet); a race which a criminal is sentenced to run in a vessel of war, for felony, or some other heinous offence. It is executed in the following manner: The whole ship's crew is disposed in two rows, standing face to face on both sides of the deck, so as to form a line whereby to go forward on one side, and aft on the other, each person being furnished with a small twisted cord, called a knittle, having two or three knots upon it; the delinquent is then stripped naked above the waist, and ordered to pass between the men on each side, and aft on the other side, a certain number of times, rarely exceeding three, during which every person gives him stripes as he runs along; in his passage, he is sometimes tripped up, and severely flogged while incapable of proceeding. This punishment, which is called running the gantlet, is seldom inflicted, except for such crimes as naturally excite general antipathy amongst the seamen.

GANYMÈDE, in fabulous history, great grandson of Dardanus, who founded the city of Troy, son of Tros and of Callirrhoë, a daughter of the Scamander. Jupiter, in the shape of an eagle, carried him off from mount Ida to the seat of the gods, where he discharged the office of cup-bearer to the immortals, Hebe having rendered herself unworthy of this office. This fiction has afforded, both to poets and artists, an inexhaustible supply of subjects. Numerous paintings, statues, cameos, and intaglios, masters in art, have been indebted to us, upon which this youth, scarcely passed the years of boyhood, is represented as of great beauty. The representations of Ganymede are to be recognised by the Phrygian cap, and the eagle, which is either standing beside him, or carrying him in its talons to Olympus.

GAOL. See Jail.

GAR. Is a root common to the Teutonic, Slavonic, and Persian languages, meaning a fortified place, and appearing in many geographical names, as Kashgar, place of the mountains, Staragd (a German place), old city. The Russian gorod, the end of many geographical names, is of the same origin. So are hrad and grad.

GARCIA, MADAME. See Malibrán.

GARCILASO DE LA VEGA (properly García Lasso de la Vega), called the prince of Spanish poets, was born at Toledo, in the year 1560. His father was comandador mayor of Leon, of the order of Santiago, counsellor of state in the reign of Ferdinand the Catholic, and ambassador at the court of Leo X.; his mother was Donna Sancha Guzman. Both families are very ancient. According to an account given in the Historia de las Guerras civiles, these precocious received their surname from their combats with Moors, heroes in the great valley of Granada, called la Vega. Gifted by nature with all the qualities of a poet, Garcilaso soon found his proper sphere. His genius was kindled by the study of the ancients, particularly of the Romans. Boscan and alvarez were the first who translated the Italians into Spanish poetry. Garcilaso followed his example, and, destroying his earlier attempts, imitated the Italians only. He succeeded so well, that he is still ranked among the best Spanish poets. Most of the events of his life may be learned from the account of his own works. He spent some time in Italy, and afterwards travelled through part of Germany, in the service of Charles V. In 1529, he was engaged in the expedition against Soliman, and, in 1533, in that against Tunis. In the latter, he received a wound in his arm, after which he remained some time in Naples. In 1536, he commanded thirty companies of infantry, and accompanied the imperial army against Marseilles. Upon its retreat, the army was detained by a tower garrisoned by Moors, said to be the tower of Muy near Frejus. The emperor gave him orders to take it. Garcilaso, amidst a shower of stones, pressed forward with a halberd in his hand; but scarcely had he placed his foot upon the ladder, when he fell to the ground, dangerously wounded in his head. He was carried to Nice, where he died at the age of thirty-three years. His body was brought to Toledo, in 1538, and placed in the tomb of his family. When SM. the King commanded all men on one side, and all on the other side, a certain number of times, rarely exceeding three, during which every person gives him stripes as he runs along; in his passage, he is sometimes tripped up, and severely flogged while incapable of proceeding. This punishment, which is called running the gantlet, is seldom inflicted, except for such crimes as naturally excite general antipathy amongst the seamen.

GARDEN. See Department.

GARDEN, PONT DU; a Roman aqueduct, in Gard, ten miles from Nîmes, joining two mountains, and passing over the Gardon. It consists of three tiers of arches; is 157 feet high, 530 long at the bottom, and 472 at the top. The grandeur and simplicity of this monument excite the admiration of every traveller. See an elevation of this, Plate IV.

GARDEN, ALEXANDER, an eminent botanist and zoologist, was born in Scotland in 1730, and educated at the university of Edinburgh. He went to America, and settled as a physician at Charleston in South Carolina, in 1752. Here he engaged in botanical researches, and, becoming dissatisfied with the system of Tournefort, then followed by most naturalists, he opened a correspondence with the celebrated Linnaeus, in 1755. Soon after, he obtained a commission from the government of Carolina, and some other works of the Swedish botanist, which greatly assisted him in his inquiries. His labours were directed to the discovery and verification of new species among the animal and vegetable tribes of North America, in which he was very successful. To his exertions Linnaeus was indebted, particularly, for a knowledge of the trees and fishes of Carolina, among which is the Siren lacertina, a most curious
animal, resembling both a lizard and a fish. After a residence of nearly twenty years in America, doctor Garden returned to England, in consequence of the political commotions which preceded the American war. He was a Fellow of the royal society in 1773, but was not admitted until ten years after. From that period, he resided in London, where he died, April 15, 1791. Doctor Garden published An Account of the Gymnosophi Electrici, or Electrical Eel, in the Philosophical Transactions, and some other detached papers, but produced no separate work.

GARDENING. Herder, in the Kalligones, calls gardening the second liberal art, architecture the first. "A district," says he, "of which every part bears what is best for it, in which no waste spot accuses the indolence of the inhabitants, and which is adorned by beautiful gardens, needs no statues on the road; Pomona, Ceres, Pales, Vertumnus, Sylvan, and Flora meet us with all their gifts. Art and nature are there harmoniously mingled. To distinguish, in nature, harmony from discord; to discern the character of every region with a taste which discovers more and more beauty in the bounties of nature—this is not a fine art, then none exists." However true it may be, that gardening deserves to be called a fine art, we can hardly agree with Herder, that it is the second in the order of time; for though gardens must have originated soon after man had advanced beyond the mere nomadic life, yet the practice of gardening as a fine art, that is, not merely as a useful occupation, must necessarily have been of a much later date. The hanging gardens of Semiramis are reckoned among the wonders of the world; but that which astonishes is not therefore beautiful. Scenecablings, supported by pillars, covered with earth, bearing trees, and artificially watered, are, no doubt, wonderful; but we have no reason to suppose them beautiful. The gardens of the Persians (paradises) are called by Xenophon delightful places, fertile and beautiful; but they seem rather to have been places naturally agreeable, with fruit-trees, flowers, &c., growing spontaneously, than gardens artificially laid out and cultivated. Whether the Greeks, so distinguished in the fine arts, neglected the art of gardening, is a question not yet decided. The gardens of Alcmeon (Odyssey, vi, 118-132) were nothing but well laid out meadows and fruit gardens, the produce of which was consumed by the family. The grotto of Calypso (Odyssey, v, 63-78) is more romantic, but probably is not intended to be described as a work of art. The common gardens which the Greeks had near their farms, were more or less like the gardens of Alcmeon. Attention was paid to the useful and the agreeable, to culinary plants, fruits, flowers, shadowing trees, and irrigation. Shady groves, cool fountains, with some statues, were the only ornaments of the gardens of the philosophers at Athens. The descriptions of gardens in the later Greek novelists do not show any great progress in the art of gardening in their time; and it would be worth while to inquire, whether the same cause, which prevented the cultivation of landscape painting with the ancients, did not also prevent the progress of the art of gardening. The ancients stood in a different relation to nature from the moderns. To them the garden meant to represent, to a certain extent, connected with that element of the romantic, which has exercised so great an influence on all arts ever since the revival of arts and letters, and, in some degree, ever since the Christian era. Even the grotoes of the ancients owed their origin merely to the desire for the coolness of the water, and to artificial ones, which were constructed in the palaces in Rome, and in which, as Pliny says, nature was counterfeited. But a grotto does not constitute a garden; and that the Romans had no fine gardens, in our sense of the word, is proved by several passages of their authors, and by the accounts we have of their gardens elsewhere. In the garden of the Villa Doria at Sluys, we find, indeed, all conveniences—protection against the weather, an agreeable mixture of coolness and warmth; but every thing beautiful relates merely to buildings, not to the garden, which, with its innumerable figures of box, and in its whole disposition, resembles in its nature, only as a theatre of figures. Of the gardens of Lucullus, Varro says, that they were not remarkable for flowers and fruits, but for the paintings of the villa. A fertile soil, and a fine prospect from the villas, which were generally beautifully situated, seemed to have satisfied the Romans. Whatever the art of gardening had produced among them, was, with every other trace of refinement, swept away by the barbarians who devastated Italy. Charlemagne directed his attention to this art, but his views did not extend beyond mere utility. The Troubadours of the middle ages speak of symmetrical gardens. In Italy, at the time of the revival of learning, attention was again directed to the advantage of the beauties of nature—this is not a fine art, then none exists. They may have been very agreeable places, but we have no reason to suppose them to have exhibited much of the skill of the scientific gardens.

At a later period, a new taste in gardening prevailed in France. Regularity was carried to excess; clipped hedges, alleys laid out in straight lines, flower-beds tortured into fantastic shapes, trees cut into the form of pyramids, hay stacks, animals, &c., were now the order of the day. The gardens corresponded with the taste of the time, which displayed itself with the same artificial stiffness in dress, deportment, and art, as in its tasteless figures and tasteless in dress, deportment, and art, as in its tasteless figures and tasteless poetry, and poetry. Lenotre was the inventor of this style of French gardening, which, however, his successors carried to greater excess. Nothing natural was left, and yet nature was often imitated in artificial rocks, fountains, &c. Only one thing strikes us as truly grand in gardens of this sort—the fountains, which were constructed at great expense. The Dutch imitated the French. The English were the first who felt the absurdity of this style. Addison attacked it in his famous Essays on Gardening, in the Spectator; and Pope, in his fourth Moral Epistle, lashest the practice as ruinously extravagant. The grotto of Vertumnus, which was directed to the vanities of his character, and displayed a better taste in the garden of his little villa, at Twickenham; crowds followed him, and practice went before theory. See Horace Walpole's History of Modern Taste in Gardening.

This style, however, was also carried to excess. All appearance of regularity was rejected as hurtful to the beauty of nature, and it was forgotten, that if in a garden we want nothing but nature, we had better leave gardening altogether. This extreme prevailed, particularly after the Oriental and Chinese style (see Chambers' Dissertations on Oriental Gardening) had become known. What in nature is dispersed over thousands of miles, was huddled together on a small spot of a few acres square—urns, tombs; Chinese, Turkish, and New Zealand temples; bridges, which could not be passed without risk; damp grotoes; moist walks; noisome pools, which were filled with cypresses, nuts, nuts, conyats, hermitages, ruins, decaying temples of stones; a pattern card of everything strange, from all nations under heaven, was exhibited in such a garden. Stables took the shape of palaces, kernels of Gothic temples, &c.; and this was called nature! The folly of this was soon felt, and a cluster style took its place. At this point we have now arrived.
GARDINER—GARLIC.

The art of gardening, like every other art, is manifold; and one of its first principles, as in architecture, is to calculate well the means and the objects. Immense cathedrals and small apartments, long epics may be equally beautiful in character, but can only be made so by a proper regard to the character of each. Thus the climate, the extent of the grounds, the soil, &c., must determine the character of a garden. Allikin justly observes, that nothing deviates more from nature, than the imitation of her works in miniature. All decoration ceases at the first view, and the would-be magnificent garden appears like a mere baby house. Let the character of the agreeable, the sublime, the awful, the sportive, the rural, the neat, the romantic, the fantastic, predominate in a garden, according to the means which can be commanded. This is not so easy as might appear at first, and it requires as much skill to discover the disposition which should be made of certain grounds, as to carry it into effect; but if such skill were not required, gardening would not be an art. Another principle, which gardening has in common with all the fine arts, is, that it is by no means to imitate reality, because reality will always be better than imitation. A gardener ought to study nature, to learn from her the principles and elements of beauty, as the painter is obliged to do; but he must not stop there. As another general remark, we would observe, that the true style of gardening lies between the two extremes. It is by no means a reproach to a garden, that it shows the traces of art, any more than it is to a drama. Both, indeed, should follow nature; but in respect to the fine arts, there is a great difference between a free following of nature and a servile copy of particular realities. Tuch, in his Phantastik, does not entirely reject the French system; at least, he defends the architectural principle as one of the principles of the art of gardening.

There are many works of great merit on gardening, of which we only mention Descriptions des nouveaux Jardins de la France, &c., by La Borde (Paris, 1806 to 1814), the most complete for descriptions; London's Encyclopedia of Gardening, 5th edit. (London, 1827); Handbuch der schonen Gartenkunst, by Dietrich (Giessen, 1815); Hirschfeld's Theorie der Gartenkunst (Leipsic, 1779). 5 vols., 4to, with many engravings, a work of very great merit, and one of the few valuable de L c e m e n t s ; A m o n t i s , nach l'Annee 1850, edited by A. Poiteau (Paris), 1022 pages. See the article Horticulture.

GARDINER, James, a Scottish military officer in the reign of George II., was born in 1688, at Carrieden, Linlithgowshire, and entered the army at the age of fourteen. On the breaking out of the Scottish rebellion of 1745, Gardiner commanded a regiment of dragoons, and fell at Prestonpans. A singular story is told, by his biographer, Doddridge, of his sudden conversion from a licentious course of life, by the accidental perusal of a Calvinistic treatise, entitled Heaven taken by Storm. He is also said to have received a supernaturnal intimation of his own approaching death.

GARDINER, Stephen; an English prelate in the reigns of Henry VIII., Edward VI., and queen Mary. He was the natural son of Lionel Woodville, bishop of Salisbury, was born in 1483, at St. Edmundsbury, and received his education at Trinity hall, Cambridge. In 1520, he succeeded to the headship of the society to which he belonged, but soon after left the university, and attached himself to the Howard family. He then entered the service of Wolsey, and soon ranked high in the favour of his master, and consequently, in that of the court. In 1527, he was intrusted with the negociations at the papal court, respecting the king's divorce from Catharine of Arragon; and, although unsuccessful in his mission, his exertions were rewarded with the archdeaconcies of Norwich and Leicester, in succession, and the advowson and vicarage of Prestonpans. The devotion to the king now got the better of his allegiance as a churchman to the pope, and he not only did all in his power to facilitate his designs with respect to the queen, whose divorce he signed, but on Henry's abjuring the supremacy of the pontiff, and declaring him an heretic, Gardiner was not supported by Gardiner, newly created bishop of Winchester. The bishop continued to enjoy the court favour till his master, taking a disgust at queen Catharine Parr, consulted with him on the easiest method of getting rid of her, and acquiesced in a plan, the leading feature of which was the exhibition of articles against her on a charge of heresy. The design had proceeded so far, that officers were already summoned for the purpose of arresting her, when the queen, in a personal interview with her husband, had address enough to turn the tables on the bishop, to re-establish herself in the king's favour, and to support her credulity. When his successor, he stood in a still more unfavourable light; his opposition to the doctrines of the reformed church bringing on him the displeasure of the prevailing party, who succeeded in inducing the young monarch to commit him to the Tower, with a sentence of deprivation from his diocese. On the accession of Mary, however, he was not only received into favour, and restored to his see, but elevated to the office of chancellor of England and first minister of state. He now distinguished himself as a principal mover in the executions which took place during this reign, acting occasionally with equal caprice and cruelty. In his private character, he appears to much greater advantage, being not only learned himself, but a great encourager of learning in others. Though artful, dissembling, ambitious, and proud, he was grateful and constant. He died Nov. 12, 1556. A treatise, entitled Necessary Doctrine of a Christian Man, printed in 1543, is said to be the joint work of Gardiner and Cramer.

GARLIC (ALLIUM SATIVUM) is a species of onion; cultivated in Britain, education about 1551. The leaves are grass-like, and differ from those of the common onion in not being fustulous. The stem is about two feet high, terminated by a head composed principally of bulbs instead of flowers; the flowers are white, and furnished with trisippicate stamens; the root is a compound bulb, consisting of several smaller bulbs, commonly denominated cloves, enveloped by a com-
GAROFALO. 365

men membrane. Garlic has a strong, penetrating odour, and pungent, acrid taste. It differs from the onion only by being more powerful in its effects. In warm climates, where garlic is produced with considerabably less acrimony than in cold ones, it is much used both for food and medicine. When bruised and applied to the skin, it causes inflammation, and rises blisters. In the south of Europe, particularly in Spain, it is very much used, entering into the composition of almost every dish, not only among the common people, but among the higher classes of society. It has many virtues. At all times, however, it has experienced much contrariety of opinion, and has been adored by some nations, and detested by others, as by the ancient Greeks. Its cultivation is easy, being a hardy plant, growing in almost every kind of soil; and it is reproduced by planting the radical or floral bulbs. Its medicinal virtues have also been much celebrated. It not only forms an excellent expectorant, but has been administered in a great variety of diseases, as hysteria, dropsy, cutaneous eruptions, obstructions, &c. The juice of garlic is a strong cement for broken glass and china. Smalls, worms, and the grubs of insects, as well as moles and other vermin, may all be driven away by placing preparations of garlic in or near their haunts. The virtues of garlic are most perfectly and readily extracted by spirit of wine.

GARNET: one of the most beautiful species in mineralogy, whether we consider the perfection of its crystallizations, its varieties of colours, or the degree of lustre and transparency which its individuals often possess. When in distinct crystals, it generally assumes the form of the regular dodecahedron, which is its primitive form. It is sometimes truncated upon all its edges, by six-sided plate-like figures, which, when produced so as to obliterate the primary faces, convert the crystal into the trapezo-hedron, which is a frequently occurring form in the species. Another very frequent form is that of the dodecahedron, with all its edges bevelled. The general aspect of its crystals, even when perfect, is somewhat spherical, on account of the great number of their sides. It sometimes occurs in fragments or grains, and in amorphous masses, either lamellar or granular. Its varieties are not all equally hard. They, however, strike fire with steel, and scratch quarts with ease. One of its principal characteristics, its fracture is uneven, or more or less conchoidal, and its lustre, though variable in degree, is usually vitreous, sometimes resinous. Its specific gravity extends from 3.55 to 4.35. It sometimes moves the magnetic needle; indeed most of its varieties, when examined by double magnetism, affect the needle. Its prevailing colour is red of various shades, but it is often brown, and sometimes green, yellow, or black. It is usually translucent, sometimes transparent, and not seldom opaque. It is easily melted by the blow-pipe into a dull, black enamei, which is often magnetic. The essential ingredients of the garnet are probably silex, alumina, and lime. The numerous varieties in character presented by that group of minerals, at present united within the species garnet, render it probable that the species will, hereafter, be found to admit of several divisions. The limits of hardness are great, but in general, from 6 to 7. Its hardness, as determined by Mohs, is 6 for the common garnet, and 7 for the precious garnet. It is both crystallized and in grains. In the latter condition, it has been brought from Ceylon, where it is found in the sand of rivers. The crystalized varieties have been found in Massachusetts, at Carlisle, in white limestone, and, in Maine, near Bath. The following table will show the composition of garnet in its principal varieties:

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<tr>
<th>Garnet</th>
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<th>Opaque 0</th>
<th>Pyrope 0</th>
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<td>Pyrope 0</td>
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The common garnet may be advantageously employed as a flux for iron ores. The powder of the garnet is used in polishing hard bodies, and is sometimes called red emery.

GAROFALO, BENVENUTO (properly Benevento Tisi da Garofalo) (1462-1515), born near Perugia, in 1481. In this city and in Cremona, he cultivated his talents for painting; but the masterpieces of art in Rome exercised the greatest influence upon him. In the year 1505, he is said to have returned to Rome, and to have entered into the closest intimacy with Raphael, whose ordinary style of painting he afterwards used for painting. He afterwards painted for Alfonso I., in his native city, where he died in 1559; he had been
blind for several years. Garamo's works show the influence of all the schools, particularly of the Lombard, and still more so of Raphael's, whom he surpassed in colouring. From Raphael he had received, says Frederic Schlegel, a certain charming clearness, an exaltation of grace, and type of beauty, which, in conjunction with his own peculiar merits, rendered him highly pleasing. Several of his Madonnas and figures of angels are full of expression. Most of his works are at Rome. Several of them, however, are in the galleries of Vienna and Dresden.

Garrone, Department of the Upper; a department of France. See Department.

Garrick, David, the most eminent actor ever produced by the English stage, was born at Hereford in 1716. His grandfather was a French refugee, his father captain in the army, and, being educated in the grammar school of Litchfield, was more distinguished for his sprightliness than attachment to literature; and he gave an early proof of his dramatic tendency, by inducing his schoolfellows to act the Recruiting Officer, in which he himself took the part of serjeant kite, being then only twelve years of age. As the circumstances of his father were narrow, he was sent to Lisbon upon the invitation of his uncle, a wine merchant in that capital. His stay at Lisbon was short; and, returning to Litchfield, he was placed under the celebrated Samuel Johnson. A love for the stage had, however, become firmly rooted in the mind of Garrick, and his grave tutor was induced to accompany him to the metropolis (1730), and Garrick was placed under the care of a mathematician, with a view of cultivating his general powers previously to his admission at the Temple. The death of his father, however, disturbed this arrangement; and, having been left a legacy of £ 1,200 by his uncle, he joined Garrick, in the wine trade. This connexion was soon dissolved, and, in 1741, he gave way to his inclina- tion, by joining Giffard's company at Ipswich, where, under the name of Lykald, he played a great variety of parts with uniform success. At this time, the stage consisted of a repertory of plays, differentially supplied with leading performers, so that when Giffard, who was manager of a theatre in Goodman's-fields, introduced his accomplished recruit there, Oct. 19, 1741, the effect was immediate and decisive. He judiciously chose the part of Richard III., which required not that dignity of person which he did not possess, while it gave him scope for all the strong marking of character, and changes of passion, in which his principal excellence consisted. He at the same time adopted a natural mode of recitation, which was a daring innovation on the part of a new performer, before audiences accustomed to the artificial, and an expectation of the school which preceded him. The part of Richard was repeated for many successive nights, and the established theatres were deserted. Their proprietors threatened Giffard with a prosecution, as an infringer upon their patents, and Fleetwood drew Garrick over to Drury-lane. By acting at Covent Garden, he had received a benefit to such a state of inferiority, that Lacy, the patentee, was glad to admit him a partner upon equal terms, in 1747, Lacy assuming the care of the property and general economy, and Garrick the management of the stage. Under these auspices, Drury-lane opened in 1747; on which occasion, his old and constant friend, Samuel Johnson, furnished the new manager with a celebrated prologue, one of the few which merit lasting preservation. This period formed an era in the English stage, from which may be dated a comparison with the French Republic, and a reform both in the conduct and license of the drama, which is very honourable to the genius of the actor who effected it.

The remainder of his theatrical career was a long and uninterrupted series of success and prosperity until its close. Although parsimonious, and, occasionally, to the prejudice of his property, he managed to keep on terms with the majority of the most respectable, and received from many of them an excess of incense, which was but too acceptable. In 1763, he visited the continent, and, on his return, after an absence of a year and a half, was received with unbounded applause. He had written, while an actor, his farces of The Lying Valet, Lethie, and Miss in her Teens; and, in 1766, he composed, jointly with Colman, the excellent comedy of The Clandestine Marriage. The year 1769 was signalized by the famous Stratford Jubilee—a striking proof of his enthusiasm for Shakspeare. It occupied the stage all the year at Stratford, and the last performance at the theatre lasted for ninety-two nights. After the death of Lacy, in 1773, the sole management of the theatre devolved upon Garrick, who continued to fulfil the duties of that office until 1776, when he determined upon his final retreat, and sold his moiety of the theatre for £ 35,000. The last part which he performed was Don Felix in The Wonder, for the benefit of the theatrical fund. At the conclusion of the play, he addressed a brief farewell to the audience. The general feeling with which this was delivered and received, rendered it truly impressive; and few persons ever quitted the stage with plaudits so loud and unanimous. He died Jan. 20, 1779. His remains were interred, with great pomp, in Westminster abbey; his funeral being attended by a numerous assemblage of rank and talent. His large fortune, after an ample provision for his widow, was divided among his relations.

As a director, Garrick has peculiarly been equalled for truth, nature, and variety and facility of expression, for which his countenance appears to have been admirably adapted. Expression and the language of passion formed his great strength, being equalled by many of his contemporaries in the enunciation of calm, sentiment, and declamation. He was not uniformly successful, but his predominant fault was vanity, and a spirit of economy bordering on parsimony, which doctor Johnson would, however, occasionally dispute. His excessive love of praise necessarily made him unwilling to share it, and he is charged with Endeavouring to keep down rising talents on this account. In his commerce with the great, he was exceedingly happy, preserving sufficient freedom to make him a pleasing companion, without encroachment on either side; and his attention to decorum secured him the society of the most grave and dignified characters. His literary talents were respectable, but not superior; besides his translation of many Italian and French epigrams, a great number of prologues and epilogues, and a few dramatic interludes, made many judicious alterations of old plays.

Garrick, Eva Maria, wife of the celebrated David Garrick, was born at Vienna, Feb. 29, 1725. Her maiden name was Vlieg, under which appellation she attracted the notice of the emperor, Maria Theresa, as a dancer, and, by her command, changed it to that of Violette, a translation of the German word wölge, the anagram of her name. In 1744, she arrived in England, bringing
with her a recommendation from the countess of Stahrenberg to the countess of Burlington, who received her, on her obtaining an engagement at the open, as an inmate of Burlington house, and ever after maintained with her. While under the protection of this noble family, mademoiselle Violetto married Garrick, in June, 1740. In 1751 and in 1763, she accompanied her husband to the continent; and, in 1769, the journals of the day speak highly of the grace and elegance displayed by her at the ball of the Stratford Jubilee. She died Oct. 10th, 1790.

GARRISON; a body of men stationed in a fortress, city, village, intrenchment, &c., for the sake of defending it. The rules by which the proper form of a garrison is determined, differ. Some reckon, for every five feet in circumference, one man, others, for every bastion, 200 soldiers. Vauban assigns, if the fortress is provided with ravelins, and a covered way for every bastion, 500 or 600 men; for every hornwork, or other large outwork, 600 more; for every detached redoubt, 150 men; for every detached fort, 600 to 800, according to its extent. The cavalry is fixed by him in the proportion of one-tenth of the infantry.

GARTER, ORDER OF THE; a military order of knighthood, instituted by king Edward III. It consisted originally of twenty-six knights companions, generally princes and peers, whereof the king of England is the sovereign or chief. The number was increased to thirty-two in 1780. The college of the order is in the castle of Windsor, with the chapel of St George, and the chapter house, erected by the founder. The habit and ensign of the order are a garter, mantle, cap, George, and collar. The garter, mantle, and cap were assigned to the knights companions by the founder, and the George and collar by Henry VIII. The garter is worn on the left leg, between the knee and the calf, and is enamelled with this motto: Honi soit qui mal y pense (Evil to him that evil thinks thereof.) The origin of the order is variously related. "A vulgar story," says Hume, "prevails, but is not supported by any ancient authority, that, at a court ball, Edward's (II) mistress, commonly supposed to be the countess of Salisbury, dropped her garter; and the king, taking it up, observed some of the courtiers to smile, as if they thought that he had not obtained this favour by accident; upon which he called out, Honi soit qui mal y pense. Other accounts, equally uncertain, are given. GARTH, SAMUEL; a celebrated publisher and bookseller, who resided in a handsome house, which had descended from a respectable family in Yorkshire. He received his academic education at Peter house, Cambridge, where it is said he resided until he took his degree of M. D. in 1691. He was admitted a fellow of the college of physicians the next year, and obtained the first rank in his profession. A division which arose among the medical profession, on the establishment of a dispensary for the poor of the metropolis, induced doctor Garth, who espoused the measure, to compose his mock-heroic poem, The Dispensary. It was published in 1699, and was widely read, and made him a very considerable fortune. He died in the height both of medical and literary reputation, in June, 1718. He was a member of the famous Kit-Kat club, and was deemed a lattitudinarian as to religion, which induced Pope, in allusion to his benevolence and kind-heartedness, to call him one who was "a good Christian without knowing himself to be so." His Claremont, a complimentary poem on the seat of the duke of Newcastle, is not without merit. His occasional pieces are sprightly and elegant.

GARUMNA; the ancient name for Gargone. (q. v.)

GRAVE, CHRISTIAN; a German writer of the last century, was born at Breslin, in 1742. Having lost his father, a dyer, while quite young, his mother paid great attention to his education. After the death of Gellert (1769), Grave became professor extraordinary of the philosophical faculty at Leipzig; and for several years delivered lectures on mathematics, logic, &c.; but, a few years after, he was compelled, by the delicate state of his health, to resign this office. He returned to his native city, Breslin, in 1772. From 1770 to 1780, he became more and more known in the philosophical world, partly by his translations of Burke's Treatise on the Sublime and Beautiful, and Ferguson's Moral Philosophy, &c., which he enriched with his own observations, partly by his own philosophical treatises, collected and published in 1779. He was then encouraged by Frederic II. to make a translation of Cicero's De Officiis, which appeared in 1783. In 1790, it had already passed through four editions. In the latter years of his life, he suffered much from hypochondria. His death took place in December, 1798. Grave was a man of a very amiable character, susceptible of the enjoyments of friendship and society. As a philosopher, he is distinguished, not so much for profound researches and new discoveries, or reforms, as by the agreeable turn of his observations. His philosophy was practical or popular. Among the great number of his works, his translations from the Greek and Latin, the Ethics and Politics of Aristotle, the Offices of Cicero, with excellent remarks and commentaries, and particularly his numerous translations of English writers, are of great value. His style is clear and correct.

GAS is the name of every permanently elastic aeriform substance. Gas is distinguished from steam, or vapour, by this circumstance, that vapours are raised from all fluids by heat, and are again condensable by cold into the same fluid form; but gases are obtained from the substances containing them only by chemical decomposition, whether this be spontaneous or artificial. All air was considered as a uniform, homogeneous substance, till about the middle of the last century, when it was discovered that there was a great difference between it and gas, as among fluid substances. Accustomed, however, to regard the atmosphere as the only air, philosophers called these new forms of air gases, to distinguish them from it. This name had been already introduced to the sciences by Van Helmont, and was derived from the old German word giesch. Every gas consists of some ponderable base, or substance, which is maintained in its aeriform state by means of heat or caloric; thus, all gases possess common properties of elasticity, &c., which they derive from the last substance; and also each one its distinguishing peculiar characteristics. All gases are distinguished by the forces constituting its base. Each kind of gas has also its own peculiar and uniform specific gravity, or weight, although they are all several hundred times lighter than water. The density of all gases is, like that of air, proportioned to the pressure to which they are subjected; and, like air, they expand to all the space enclosed. The gas is rendered more dense by its abstraction. All gases are susceptible of forming various combinations with fluid and solid substances, and these become fixed in a solid or fluid form. As gases possess very many remarkable properties, and play an important part in almost all chemical, and in
GAS—GAS-LIGHT.

many natural phenomena, we will describe a few of the most interesting and important species. The following are a few of the most remarkable:

1. **Atmospheric air.** This is now well known to be, not a simple element, as was long supposed, but to be a mixture of several gases of vapoury nature. This is very simply and evidently ascertained in the following manner:—If a quantity of common atmospheric air is inclosed in an inverted glass over mercury, and burning phosphorus is introduced into it, and its introduction repeated till it consumes the gas, then, if the portion of air enclosed in the glass is diminished twenty-one parts in the hundred, while seventy-nine remain; and this residue will not support combustion, or maintain animal life, for fire goes out, and animals are suffocated, upon being placed in it. These twenty-one parts consist, as is found by many experiments, of a peculiar kind of air or gas, first discovered in 1771—4, which, from its being necessary to the support of life and combustion, was termed vital air, but which, in the reformed chemical nomenclature of Lavoisier (a great portion of which remains unchanged,—a noble monument of his genius), is termed oxygen. It is found to enter into the composition of all acids then known.

The remaining seventy-nine parts consist of another peculiar gas, called azote, or nitrogen gas. Combustion, with a very few exceptions, takes place only when oxygen gas is present; and the substance burnt is found, upon examination, to have formed an intimate combination with the base of the gas, while the heat, or caloric, which, we have seen, entered into its composition as a gas, is given out in the shape of blaze or fire. And combustion takes place with much greater rapidity and brilliancy in pure oxygen than in atmospheric air, because in the last a greater proportion of nitrogen or azote gas is in contact with the burning body, which it has a constant tendency to extinguish. If a half-extinguished taper is introduced into pure oxygen gas, it blazes up at once; a red-hot wire will burn in it with brilliant scintillations, and burning phosphorus immersed in it throws out a light as dazzling as the sun itself. Oxygen, though necessary to support animal life, will destroy it in time, if resired in a state of purity; for it stimulates so highly as to induce inflammatory and other diseases. Bodies burned in it are changed to acids, as sulphur, carbon, phosphorus, &c.; and, in fact, if any substance must be named as the master spirit of chemistry, it is certainly oxygen gas.

2. **Azote gas** has no properties by means of which its action can be subjected to actual inspection; but it is nevertheless important, from the combinations which it forms. Some of these are aqua fortis, nitrous acid, and the still more remarkable nitrous oxide gas. This peculiar exhalating substance is one of the compounds of azote with oxygen, and is one of the most singular substances in nature.

3. If the vapour, or steam of water, is made to pass over iron filings, or wire, heated to redness, in an earthen or iron tube, and the air which escapes at the other end is collected, there is obtained another species of gas, which is called hydrogen, which is inflammable, of an offensive odour, and is a constituent part of water. When mixed with oxygen gas, it explodes upon the application of fire, and water is the result of the explosion. The proportions in which they are mixed, to produce explosion, are two volumes of hydrogen, and one of oxygen. This experiment should be tried only in a strong bottle, otherwise it would burst. When pure, hydrogen gas is fifteen times lighter than atmospheric air, and, upon this account, is used for filling balloons.

This gas retains its gaseous form when combined with carbon, sulphur, and phosphorus. Some of these gaseous compounds, especially those into which carbon enters as a part, are of some importance in the arts, furnishing the gas for lights, &c.

4. When several gases mix with oxygen gas, the gas does not appear to diminish in quantity, but it presents a set of entirely new properties, and is found to be changed into carbonic acid gas. It extinguishes burning bodies, and is fatal to animal life. It is so much heavier than common air, that it can be kept in an inverted jar, and poured from one vessel to another.

From this property, it is supposed that it comes to the lowest place to which it has access, and is thus found at the bottom of caves, wells, &c. It is this gas which is so destructive to the lives of those shut up with burning charcoal, and which is also found in brewers' vats, in cellars, wells, drains, &c., which have been long unopened, and into which it is unsafe to descend till they have been ventilated by-dashing down buckets of water, or swinging a large board or fan in them. It is absorbed in large quantities by water, to which it communicates a grateful pungency, in which form it constitutes the mineral or soda water of the Thames, and is also supposed to be the same gas which some persons say affords a fatal poison, and a luxurious refreshment. Many natural mineral waters are impregnated with the same gas, as those of Saratoga, Spa, Pyrmont, &c. It was first discovered in 1755, and has since become familiarly known.

5. Another still more important gas is the disinfecting, bleaching gas, called chlorine, (q. v.) This is procured by the decomposition of muriatic acid, or of salts which contain it, and is highly valuable from its contributions to the health, convenience, and luxury of man, in the cases above referred to. For the purpose of bleaching, it is united with water: see an account of the process in the article Bleaching. For a more minute account of the above-mentioned and all other gases, we must refer to the separate articles.

GAS-LIGHT;—The application of carburetted and bicarburetted hydrogen, i. e. olefiant gas, to the lighting of buildings and streets. In 1758, the Rev. Mr Clarck, of Bala, in Caernarvonshire, applied gas, obtained by his experiments on the inflammable nature of the gases obtained by the decomposition of pit-coal in heated close vessels, but he had made the discovery long before, as he alludes to it in a letter addressed to the society, in May, 1758. He yet found difficulties in the application of his gas, and it was even hinted before 1792. In this year, Mr W. Murdoch, a native of Cumnock, in Ayrshire, but at the time of which we speak residing at Redruth, in Cornwall, in the employment of Messrs Watt and Boulton, made extensive experiments on the illuminating properties of gases obtained by distilling coal, wood, peat, and other combustible substances, which led him to the idea of collecting these gases in vessels, and expelling them through jets for light, as a substitute for lamps or candles, and on this principle he lighted his own house. From want of leisure he did not resume the consideration of the subject for nearly five years. In 1777, he lighted his house at Cumnock, and in the following year he erected a gas apparatus on a large scale at Soho foundry. On the rejoicing for the peace of Amiens in 1802, the whole front of the Soho works was illuminated by Mr Murdoch's gas apparatus. In the same year, M. La Bon lighed his house by expelling gas, obtained from wood and coal, and made a proposal to supply the whole city, but Lampion had hinted at the practicability of such a thing, the previous year, in a German work on mining, published at Gottingen. In 1803, Mr Winsor, who borrowed his knowledge
from M. Le Bon, exhibited gas illuminations at Lon-
don, in the Lyceum; and in 1808, a gas apparatus
was erected at the factory of Messrs. Phillips and Lee
of Manchester, under the direction of Mr. Murdoch,
who was the same year, honoured with the Rumbold
medal by the royal society for the paper on gas light,
which he furnished for their transactions of that year.
Mr. Winsor had, by specious promises and false state-
ments, raised the sum of £50,000 from a number of
subscribers who formed themselves into a company,
called a *National Light and Heat Company,* only raising
this sum, he was assisted in imposing upon the pub-
lic in drawing out erroneous statements of pretended
facts, by Mr. Frederic Accum; but with the money
Mr. Winsor lighted Pall-Mall, and thus proved the
practicability of lighting the streets of cities by gas.
Since this time, gas has been more extensively
employed every succeeding year, and throughout
this kingdom almost all factories and large towns
are lighted by it. The chief improvements upon
gas apparatus, since Mr. Murdoch's erection at
Manchester, have been made by Mr. Cleg, who has also
furnished the most correct specimens of calcu-
lation.

Gas, for the purpose of illumination, is obtained,
in general, from coal, and sometimes from oil. In
detailing the process, we shall devote our attention
chiefly to the formation of coal gas.

The first operation is the decomposition of the coal
by heat, which is effected by subjecting the coal, en-
closed in a cast-iron vessel called a retort, to the action
of a furnace. In general the retorts are made in the
form of hollow cylinders, and lie in the furnace with
their axes in a horizontal direction. It has been
found, however, that although the cylindrical shape
is the most conducive to durability, it is inferior to
that form of the retort where the cross section is an
ellipse, which last, though not so durable, evolves
the gas much more rapidly, in which desirable qua-
lity the saddle shaped retort, the cross section of
which is seen at A, is the best of all. In the engraving
above the plate XXXIII. is given a view of an
improved gas apparatus, well adapted for supplying
a factory where light may be required from between
two and five hundred jets. In describing this en-
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gas through the pipe J, whose top reaches nearly to the lid of the purifier. This pipe passes out at the bottom of the vessel, and opens into a cylindrical vessel, K, containing liquid lime, or lime cream, as it is usually called. In this vessel, the purifying process is completed, and, in order that the gas may be brought into contact with as much of the cream as possible, the liquid is kept in agitation by means of floats or corks revolving on an axis, which is put in motion by the handle M; which, in small establishments, is turned occasionally by the attendant of the apparatus; but, in large gas manufactories, it is kept in constant motion by machinery. The lime cream is mixed in a box, O, and is admitted, when required, into the purifier, through a pipe furnished with a stop-cock, as seen in the engraving. In the liquid purifier there are three division plates, placed horizontally, and perforated with holes at one end, the perforated ends being alternate, so that, when the gas passes up through one plate, it must traverse across the vessel before it can rise through the second, and so with the third after passing through which the purified gas ascends through the pipe P, into the gasometer R.

All this purifying process is instituted with a view, as before stated, of separating carbonic acid and sulphuretted hydrogen from the gas, the presence of either of which is highly detrimental to its illuminating power. It is, therefore, of the utmost importance to frequently test the purity of his gas, in order to determine whether the lime ought to be changed, or the retorts recharged. The presence of sulphuretted hydrogen may be easily detected by allowing the gas to play upon a piece of white paper, moistened with a solution of acetate of lead (sugar of lead), as the paper will soon become black; and the presence of carbonic acid gas may be detected, by shaking some of the gas with pure lime water, in a phial; the mixture will soon become turbid, by the action of the carbonic acid, if it be present.

The gasometer, into the bottom of which the pipe R passes, is a sort of storehouse for the gas. It consists of a hollow cylindrical vessel, usually made of cast metal plates, open at one end, and placed upon its open end in a cistern of water rather larger in dimensions than itself. The principles of its construction are precisely the same as those of the gasometer employed in pneumatic chemistry. The best proportions of the gasometer are, that the depth should be equal to twice the diameter, and the capacity must be regulated by the quantity of gas required for consumption. The greatest care should be taken that it be made strong and tight, by being well riveted, and braced with malleable iron stays. The plates are made to overlap each other, similar to those of steam engine boilers, slips of canvas, besmeared with white lead and oil, being interposed, to ensure perfect tightness. The cistern or tank, R R, is sometimes made of mason work, and not unfrequently of cast iron plates. The pipe P from the purifier passes up through the bottom of the tank, and terminates in an opening above the surface of the water, with which it is nearly filled; this is called the induction pipe. There is another pipe of similar dimensions also opening into the tank, but led out in a different direction from the induction pipe, for the purpose of conveying the gas to the place where it is to be consumed.

As the weight of a gasometer is very considerable, it is necessary to diminish it, so that the pressure of the gas which enters from the purifier may cause it to rise in the tank. This end is accomplished by a counterweight, S, suspended by a chain passing over the pulleys T T—an arrangement which will be at once understood by an inspection of the plate. The regulation of the weight of the counterpoise is a matter of some nicety, as it is evident, from the principle of hydrostatics, that the weight of the gasometer will increase as it rises out of the tank. In order to compensate for this variation of weight of the gasometer, the differences of its weights in and out of the water must first be ascertained upon. Now it has been found that cast iron loses about one-seventh of its weight when immersed in water; and it is clear that as the gasometer ascends, the suspension chain, S T, is lengthened, or, to speak more correctly, that portion of it which adds to the effect of the counterweight is increased; and, therefore, if so much of the chain as is equal in length to the height of the greatest elevation of the gasometer, be made equal in weight to half of the weight lost by the gasometer by immersion, then will the variation of its weight be compensated for, and its pressure upon the gas rendered uniform.

When the gas in the gasometer is to be expelled for use, a certain pressure must be exerted. This is effected by diminishing the counterweight, by a quantity which is usually estimated as equivalent to the pressure of a certain depth of water; thus, if it be required that the gas should issue from the gasometer with a force equal to the pressure of one inch of water, we have only to find the area of the bottom of the gasometer, and see what pressure would be exerted by a column of water with this base and a height of one inch. Now if the area of the cross section of the gasometer be 1000 inches, since the pressure of one inch of water is 0‘36 of a pound, the pressure will be 1000, multiplied by 0‘36, that is 360 lbs.

The consumption of gas in large towns is by no means regular, and therefore the effect of the constant and equable pressure of the gasometer will in a great measure be destroyed by the unequal expenditure of gas. The contrivance employed for overcoming this is at once simple and ingenious. The pipe A, by which the gas issues from the gasometer, is led into a small vessel, furnished with a conical valve, C, which opens into a vertical pipe leading into a vessel inverted in water; resembling a gasometer. The pipe B leads the gas off for the supply of the jets. If the consumption of gas becomes greater than the supply, then will the pressure on the bottom of the valve C be increased by the gas from the pipe A, that on the upper side from the gas in the pipe B being diminished; the valve C will therefore be raised a little, and consequently more gas will issue out of the gasometer. Again, if a number of the jets be taken off, and the consumption become less, then will the supply exceed the demand, and the pressure of the gas in the pipe B will exceed that of the gas in the pipe A, when, in consequence, the valve C will have a tendency to close, and so allow less gas to issue out of the gasometer.

Before the gas is consumed, it is frequently passed through an instrument called a meter, in order to ascertain the number of cubic feet which are used in a given time, or in a particular place. The annexed wood cut will show the construction of this instrument.
A A represents an outside cast metal case of a flat cylindrical form. Into the back of this casing a pipe is led from the gasometer, the opening of which turns up within the case. On the knee of this point a pivot is fixed exactly opposite to another fastened into the front face of the case, on which pivots a sort of drum, C C C C, revolves. This drum carries vanes, which open at the circumference, as may be seen in the figure. The instrument is filled with water up to the height marked by the dotted line, through an orifice in the side of the vessel, in which a plug is fitted. The gas enters by the pipe A, and fills the space above with gas, causing the drum, C C C C, to revolve from right to left, while the gas escapes from an orifice on the other side into the pipes to be consumed. By means of a train of wheels, work fixed upon the axis of the drum, an index is turned, which points out on an index-plate how many cubic feet have passed through the meter. Should there be too much water in the meter, it is clear that the index will point out falsely, as there will be less consumed than is registered.

The principles of the distribution of gas are exhibited in the following table given by Mr Peckston. The gas-holder is worked at a pressure of one vertical inch of water, and each argand burner consumes five cubic feet per hour.

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<th>Cubic feet</th>
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<th>Burners</th>
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<td>passing per</td>
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<td>passing per</td>
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<tr>
<td>hour.</td>
<td>20 4 5 12000 2500</td>
<td>250 50 9 4000 1000</td>
<td>350 100 12 25000 5000</td>
</tr>
<tr>
<td>inches</td>
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The number of candles equivalent to produce an equal quantity of light, may be found by multiplying the last column in the table by 4.

The area of the pipes which lead from the retort, must be equal to the sum of the area of all the pipes to which they transmit the gas for consumption. The main pipes are usually made of cast metal, and those which are led from them to the jets, are commonly formed of tin plate. The diameter of the bore of gas burners varies from one-fourth to one-sixtieth of an inch.

It has been found that one pound of candle coal, decomposed on the small scale, will yield 5 cubic feet of gas, but in large manufactories only about 4 1/2 feet, and the quantity of tar from one ton of coal is usually about 11 gallons; and, according to Mr Murdoch, 110 tons of coal will yield about 40 tons of coke. The quantity of coal for furnaces used with the tar and coke is about twenty-six tons for seventeen of the retort coal, and the quantity of lime for purifying, varies from five to ten per cent. of the weight of the retort coal. 3500 cubic feet of gas may be obtained from 1120 lbs. of candle coal, but only 3000 from the same quantity of Clifton coals.

Dr Henry states that 100 measures of oil gas is composed of:

- Olefiant gas | 38
- Acetone | 3'
- Carburetted hydrogen | 0'34
- Carbonic oxide | 0'3
- Hydrogen | 31

The specific gravity being 0'906, air = 1 then will 100 measures of coal gas be found to be composed of:

- Olefiant gas | 12
- Carburetted hydrogen | 82'2
- Carbonic oxide | 3'5
- Acetone | 1'3

The specific gravity being 0'650, and the hydrogen in a condensed state of the olefiant gas.

We shall not enter here into the process of oil gas manufacture, as it has not, upon trial, been found to possess all the advantages which its advocates would have had the public to believe. Its production is much more expensive than that of coal gas, and its tendency to explode, when ignited in combination with common air, is also much greater than the gas obtained from pit coal, but, at the same time, its illuminating power is to that of coal gas as 16 to 10.

The formation of oil gas is much more simple than that of coal, nothing more being necessary than decomposing the oil in retorts moderately heated, and allowing the gas which rises to bubble through a vessel of water for its purification, before it passes into the gasometer. It contains more carburetted hydrogen than coal gas, in the proportion of 75 to 40, in equal volumes. It may be obtained from oil of very inferior quality, and is destitute of the disagreeable odour of coal gas, nor does it injure the metallic pipes through which it is conveyed. The peculiar smell of coal gas may be regarded as an advantage, since it warns the consumer of its escape.

The following statements may be interesting to the reader. A manufactory near Glassow gives 400 common gas burners, or jets, during all the dark hours from six in the morning till eight at night, from September 16, 1833, till April 12, 1834, is supplied with gas from two retorts, each having an elliptical cross section, the greater diameter of which is one foot six inches, and the lesser eight inches, the length being sixty-two inches; thirty-six tons of Jordanhill coal for the retorts, forty tons of dress for the furnaces, used along with the tar and coke produced during the process. The coal is changed in the retort once in six hours, and the lime in the purifiers is changed once in three days. The cost of the whole apparatus amounted to £400, and £60 per annum are required for its maintenance, of which £16 go to pay the attendant; £18 for gas coal; £10 for furnace coal; £2 for lime, and the rest for repairs, &c.; the price of light for one jet being thus £0 4s. 6d.

In a larger manufactory, in the same city, using 837 jets during the same hours as the factory alluded to in the foregoing statement, the following quantities of coal were consumed each successive fortnight, from the 1st of September 1833, to March 28, 1834.

| Tons Cwts. Qrs. | 18 11 0 2 A 2 |
The retors are three in number, one of which is kept in reserve. The length of each is five feet, depth one foot, and breadth three feet. The cross section being of the saddle form, and the gasometer having a capacity of 453-4 cubic feet. The expense for Lesmahago coal for retors amounts to £44 16s., allowing £20 1s. 6d. per ton; coal for furnaces (used along with coke and tar), seventy tons at £20 4s. 0d. per ton, being £214 6s. 0d. For twenty-four bolls of Irish lime, at £20 1s. 3d. per boll; attendant's wages, £17 0s. 0d.; in all £27 7s. 0d., and, allowing about £23 for contingencies, the whole cost is £100.

GASCONY; before the revolution of 1789, a considerable province of France, situated between the Garonne, the sea, and the Pyrenees. Sometimes, but improperly, under the name of Gascony, Languedoc, and the whole of Guiter, were included. The Gascons have a great deal of spirit; but their exaggeration in describing their exploits has made the term gasconade proverbial. The Gascons who dwell near the Pyrenees, were originally from Spain.

GASKET; a sort of plaited cord fastened to the stilt-yards of a ship, and used to fasten or tie up the sail firmly to the yard by wrapping it round both.

GASSENDI, Peter, an eminent French philosopher and mathematician, was born in 1592, at Chantersier, near Digne, in Provence. He early displayed a lively and inquisitive genius, which determined his parents, although in moderate circumstances, to bestow upon him the best education in their power. It is said that he delivered little sermons when only four years old. Under the instruction of an able master at Digne, he made a rapid progress in the Latin language, and afterwards studied philosophy at the university of Aix. At the age of nineteen, he was appointed to fill the vacant chair of philosophy at Aix, and, notwithstanding the authority of Aristotle was still warmly maintained, he ventured publicly to expose the defects of his system. His lectures on this subject, which were delivered in the indirect form of paradoxical problems, and published under the title of Exercitationes Paradoxicae adversus Aristoteleum, gave great offence to the votaries of the Aristotelian philosophy, but obtained him no small reputation with Peiresc and other learned men, through whose interest, after being induced to take orders, he was presented to a canonry in the cathedral church of Digne, and made doctor of divinity. A second book of Exercitationes excited so much enmity, that he ceased all direct attacks on Aristotle, although he still maintained the predilection he had formed for the doctrines of Epicurus, which he defended with great learning and ability. He strenuously maintained the atomic theory, in opposition to the views of the Cartesians, and, in particular, asserted the doctrine of a vacuum. On the subject of morals, he explained the pleasure or indifference of Epicurus in a sense the most favourable to morality. He was appointed lecturer on mathematics in the collège-royal, at Paris, in 1645. Here he delivered lectures on astronomy to crowded audiences, and, by his great application, so injured his health, that he was obliged to return to Digne in 1647, from which place he did not return until 1653, when he published the lives of Tycho Brahe, Copernicus, Peurbach, and Regiomontanus (John Muller). He also resumed his astronomical labours with an intensity to which his state of health not being adequate, his former disorder returned, and terminated his life, Oct. 25, 1655, in the sixty-third year of his age. He is ranked by Barrow amongst the most eminent mathematicians of the age, and mentioned with Galileo, Gassendi, and Descartes. Gassendi was the first person who observed the transit of Mercury over the sun. It is to the credit of both philosophers, that although mutually warm in their scientific controversies, Gassendi and Descartes became friends in the sequel. The MSS. which he left behind him, and were published during his life, were, in 1658, collected by Sorbiere, in 6 volumes, folio, and published at Lyons; and by Averrani, also in 6 folio volumes, at Florence, in 1728. They consist of the philosophy of Epicurus; the author's own philosophy; the lives of Epicurus, Peiresc, Muller, and others, in addition to those already mentioned; refutations of Descartes' epistles, and other treatises. Gibbon calls Gassendi the greatest philosopher among the learned, and the most learned of the philosophers of the age; but Descartes stands higher for original thought, and in respect of style.

GASTON DE FOIX, duke of Nemours, born 1489, son of John de Foix, count d'Estampes, and Mary of Savoy, daughter of Louis of Savoy, was the favourite of his royal uncle, who used to say with exultation, "Gaston is my work; I have educated him, and formed him to the virtues which already excite admiration." At the age of twenty-three, he acquired great celebrity in the war which Louis carried on in Italy. He routed a Swiss army, rapidly crossed four rivers, drove the pope from Bologna, won the celebrated battle of Ravenna, April 11, 1512, and here ended his short, but glorious life, while attempting to cut off a body of retreating Spaniards.

GASTRIC; that which relates to digestion; from γαστρος, belly. GASTRIC JUICE; a fluid of the utmost importance in the process of digestion. It does not act indiscriminately on all substances; nor is it the same in all animals; nor does it continue always of the same nature, even in the same animal, changing according to circumstances. It acts with a chemical energy in dissolving food; attacking the surface of bodies, and, in the same operation, separating the particles of them. It operates with more energy and rapidity the more the food is divided; and its action is increased by a warm temperature. The food is not merely reduced to very minute parts; its taste and smell are quite changed; its sensible properties are destroyed; and it acquires new and very different ones. This fluid does not act as a ferment; it is a powerful antiseptic, and even restores flesh already putrefied.

GASTRIC SYSTEM comprehends all the parts of the body which contribute to digestion. Gastric disorders are those in which the digestion particularly is deranged. As the precepts of health, with regard to eating and drinking, are so often transgressed, the quality of the food itself often bad, the gastric system composed of many parts, and much affected by the influence of the external temperature, gastric disorders must necessarily be frequent. Their symptoms are, want of appetite, a bitter and disagreeable taste, a furred tongue, frequent and unpleasant rising from the stomach, and drinking, are so often transgressed, the belly, looseness or costiveness, &c; from the close connection of the organs of digestion with the other parts of the body, gastric disorders are often combined with others; e.g. with fever. See Dysepsia and Digestion.

GASTROMANTIA (from γαστρος, belly); a peculiar kind of divination among the Greeks. They
arranged certain large-bellied glass vessels, filled with clear water, in a particular place, with burning torches about them. They then prayed in a low tone: to aัญ clarity, by suggesting to him the question which they wished to have solved. The adjutant-general, a small-pox, or a pregnant woman, was to notice with care all the changes that took place in the vessels, and at the same time, to impose, and even to demand, an answer from the divinity. The spirit addressed at last gave the answer by certain images appearing in the vessels, which betokened future events.

GASTRONOMY; the science of eating and drinking. The gastronomy of the Romans was gross and luxurious; in modern times, that of the French is, among epicures, most approved. See the Paris Almanach des Gourmands. The new series, from 1825, contains songs by Béranger and others.

GATES, Horatio, an American officer, who distinguished himself during the revolutionary war, was born in England, in 1728. He early embraced the career of arms, and rose to the rank of major by the force of Gates. The command was rejected, in 1775. In consequence of a severe wound which he received in the battle, he was for some time debarred from active service; and, at the conclusion of the peace, he returned to his native country. He soon, however, received, and purchased an estate in Virginia, on which he resided until the commencement of the super-Gates, which was appointed adjutant-general by congress, with the rank of brigadier. In July, 1775, he accompanied the commander-in-chief to Massachusetts, where he continued until June in the following year, when he received the chief command of the army which had just retreated from Canada. This appointment gave great umbrage to general Schuyler, who had hitherto superintended the forts and garrisons of New York, and now expressed his determination to resign unless the injury was redressed. Congress, in consequence, endeavored to reconcile the pretensions of the two generals, by appointing them authorities in some measure independent on each other. Schuyler was directed to provide and equip a naval armament, in order to obtain and preserve the command of the lakes and rivers which maintained the communications between Canada and the maritime and Hudson country, and Gates was enjoined to co-operate in this service as far as lay in his power. But they were only able to equip about fifteen vessels, half of which were little better than boats, which were placed under the command of Arnold, who was opposed by a much superior force under Carleton. The first step of Gates occasioned some surprise and much alarm. The American forces had retreated to Crown Point, where such ravages were made among them by the small-pox that Gates abandoned that fortress, and concentrated his army at Ticonderoga. This movement, which opened to the enemy the whole navigation of lake Champlain, was greatly condemned by Washington and all the field-officers. The unexpected retreat of general Carleton relieved them from the necessity of defending Ticonderoga. After this retreat, Gates marched with a considerable detachment to the assistance of general Washington, and continued to hold his posts in the middle colonies, until the spring of 1777, when he resumed his command on the northern frontier. Here he was shortly afterwards superseded by Schuy-
and chronology; illustrated its departments by various important works and treatises, and introduced into the study of universal history, and the academic discourse on this subject, the improved method which connects the events according to the order of time synchronically. Ancient history, particularly, was indebted to his industry, deep erudition, and spirit of research. It is to be regretted that many of his works were left unfinished. He published several excellent manuals of diplomacy, chronology, genealogy, geography, and heraldry. Gatterer’s inflator, Ingegno, Magdalen Philippin, the widow of Engelhardt, born 1756, made herself known as a lyric poetess.

GAU; a German word, meaning originally a district, as in Gau-graf, district-count. It appears at present in several geographical names, as Thuring, Anjou, Rhenania, district or canton of the rivers Thur, Aar, Rhine.

GAUL, GALLIA. The country of the Gauls extended, in the times of the Romans, from the Pyrenees to the Rhine, and on the side of Italy, beyond the Alps to the Adriatic. It was divided into Gaul on the side of Italy (the Transalpine Gaul); 2. Gallia Cisalpina, i.e., Gaul on the other side of the Po. Lucania was inhabited by the Ligurians, Gallia Transpadana principally by the Taurins, Insabrians, and Cenomanes; Gallia Cispadana by the Boli, Senones, and Lingones, all of them nations of Gallic descent. Most of the cities, which were principally Roman colonies, have retained their ancient names. In Gallia Transpadana are Turin; Trieste, Aquileia, Padua, Vicenza, Verona, Mantua, Cremona, Brixia (Brescia), Mediolanum (Milan), Ticinum, Pavia, Augusta Taurinorum (Turin); in Gallia Cispadana, Rho (Pollenza), Mutina (Modena), Parma, Piacenza.

11. Transalpine Gaul was also called Gallia copnata, in distinction from Gallia togata, because the inhabitants wore their hair (comata), long, or Gallia brocado, because, particularly in the southern parts, they wore a kind of breeches (brocado), which the Romans did not use; bordered west on the Pyrenees, east on the Rhine, on a line drawn from its source to the small river Varus (Var), and on this river; north on the Atlantic, and south on the Mediterranean; it therefore comprised France, the kingdom of the Netherlands, Switzerland, and the left bank of the Rhine. The part of Transalpine Gaul nearest Upper Italy, and stretching along the Mediterranean towards the Pyrenees, was conquered by Fabius. As this was the first part that was converted into a Roman province, it was called, by way of eminence, the Prunicia (which was afterwards changed to the Seine and Marne); 3. Gallia Belgica, by the Alps, the Cevennes, and the Rhone. Caesar, who conquered Transalpine Gaul at a later period, found it divided into three parts: 1. Aquitania, extending from the Pyrenees to the Garonne, chiefly occupied by Iberian tribes; 2. Gallia Celtic, from the Garonne to the Seine and Meuse; 3. Gallia Belgica, in the north, extending to the Rhine. By the command of Augustus, Agrippa organized the country anew, and divided it in the following manner: 1. Aquitania was enlarged so as to reach the Loire, in order to render it more nearly equal to the others; capital, Burdigala (Bordeaux). 2. Belgica, between the rivers Seine, Saône, Rhone, Loire, and the North sea; capital places, Vesontio (Besançon), Treveri (Trier), and others. This division included also the countries on the Rhine, and Switzerland, which were, however, afterwards separated from it, under the name of Germania prima or superior, and Germania secundaria or inferior. It was situated, along the Rhine, Colonia Agrippina (Cologne), Moguntiacum (Münster), Argentoratum (Strasbourg). 3. Gallia Lugdunensis, or Celtica, comprised the rest of the country of the Celts, the whole region between the Seine, Saône, and Loire, as far south as the Cevennes and the Rhone; chief towns, Lugdunum (Lyon), Alesia (Alsace), Bibracte, afterwards called Augustodunum (Autun), Lutetia Parisiorum (Paris). The latter was, in the time of Caesar, an insignificant place, confined to the island in the Seine; but it soon rose into importance on account of its favourable situation, as a naval station of the Cisalpine Gaul.

The Gaes were the chief branch of the great original stock of Celts. They called themselves Gaal or Gati, whence probably the name Gaul. On the whole, a great resemblance appears to have existed among all the Celts; and although they were divided into numerous tribes, there were but few branches that were perceptibly different from each other. It is probable that, descending from the Caucasus, they took their way along the south side of the Danube, having the numerous nation of the Thracians in their rear and the Germans on their side; but the period of this event is so remote, that we cannot even venture a conjecture in regard to it. They took possession of several countries under different names in their earliest migrations: thus, under the names of Umbri and Ausones, they occupied a part of Italy; of Taurisci (afterwards Rheti), Vindelici, Norici, Helveti, the Alpine countries. A second stream, giving the name of Thesauri, passed from the Rheti about 2000 B.C., and entered Italy by the way of Trent. There they received the names of Tusci, Etruscii, from the neighbouring nations, and, having conquered 300 cities of the Umbri, who were before the ruling people in that region, they became a great part of Italy. The early civilization of these Etruscans, their ancient mythology, their artificial calendar (which bears some resemblance to that of the Aztecs in Mexico), and several other circumstances, almost force upon us the belief (whatever may be said of the influence of the Greeks), that a very ancient civilization existed in this tribe, which was afterwards lost or changed by the influence of other nations. Several Celtic tribes retained their seats on the shores of the Adriatic, along the banks of the Danube, and in the southern part of Germany, while the principal branch of the nation settled between the Pyrenees and the Alps, the ocean bounded by it, which received its name from them; hence they passed into Albion and Ierne (Great Britain and Ireland).

A too great population (which is not uncommon in half savage and partly nomadic nations, whose means of supplying their wants are very imperfect, and who require a great extent of country), and the pressure of German and Thracian tribes, caused general migrations among the Gaus about 397 B.C. Colo-
ries from many tribes took their course westwards over the Alps into Italy, and eastwards along the Danube. This passage of the Celtic Gauls over the Alps (commonly placed 200 years earlier) brought that nation into the region of history. We find it divided into many tribes, one of them (at that time the Bituriges) with a superiority almost amounting to a supremacy. The abuse of this superiority caused dissensions, and individuals joined some other tribes. In this manner the supremacy passed into different hands, but by the general system of the same. The system of dependence went through the whole nation. The only free men were, in fact, the nobles (who, by way of distinction, were called warriors) and the priests (Druids). The common people lived in a state of subjection, defended against wrongs and injuries, not by the laws, but by the protection of the powerful. Among the nobility, the numerous princely families held the first rank. In important expeditions, they seem to have chosen a general chief. (See Brennus.) The male and female Druids (q. v.) were in possession of certain knowledge, which was transmitted from generation to generation. Their religion was repulsed with abominable priest-craft, and horrible superstitions (frequent sacrifices of human beings). Duels and drunkennes were common, and their cities few, villages, and villages numerous; their household utensils few and poor. Few of them tilled the ground; the greater part subsisted on the produce of their herds and flocks. Their beverage was a kind of beer or mead; the cultivation of the vine was unknown to them. The sand of the rivers and some mines furnished gold to the higher ranks. Persons of distinction went into battle with a cloak around their shoulders, made of a party-coloured, checkered, and shinning stuff (like that which is still worn by the Highlanders). They wore no other garment: their neck and arms, however, were decorated with thick gold chains. Their high stature, savage features, and matted yellow hair, rendered their aspect terrible; their impetuous and blind courage, their immense numbers, the stunning noise which proceeded from their numerous horns and trumpets, their terrible devastations whenever they passed through a country (captive were often sacrificed, the heads of the slain (often also as goblets), rendered them the terror of the western world. But they were destitute of union, perseverance, and good arms; for their shields were light and hardly contrived, and their enormous swords of copper were bent at every blow upon iron, so that it was frequently necessary to straighten them. For this reason their first onset only was to be feared. This nation—whether the love of wine, or the invitation of an Etruscan, whose wife had been seduced by one of the princes of the country, and who thirsted for revenge, had allureth them into Italy—this nation fell upon the Etrusci, who, in comparison with them, were effeminate, and who were at the same time assailed by the Romans. On the very same day (396) on which Camillus conquered Veji, the Gauls are said to have taken by assault Melpum, a considerable city of Upper Italy, belonging to the Etrusc. But the tempest of this migration was soon directed against Rome. The Latins, foreseeing the own fate in the Etruscan cities that lay around it, endeavoured to stop the victorious course of the Gauls by entering into negotiations with them. On this occasion, the Roman ambassadors violated the law of nations; the incensed Gauls, being denied satisfaction, advanced towards Rome, destroyed the outworks in the Etruscan cities that lay around it, and laid siege to the capital, which was on the point of purchasing its deliverance with gold, when Camillus appeared to rescue it.

Our account of the wars of the eastern Gauls along the banks of the Danube, are very imperfect; this, however, is evident, that their movements occasioned the migrations of whole nations. It appears that a part of a German race, the Cumiri, or Cimbri, were already mixed with the Celts. 109 years after the burning of Camillus (from 280—278 B. C.), made three destructive irruptions into Macedonia and Greece, which had already beenpopulated by former wars. Ptolemy Ceraunus, king of Macedonia, and Sosthenes, the commander of the army, fell in battle, and Greece trembled. But in an attack on the temple of Apollo at Delphi (which contained immense treasures, but was protected by its situation), the terrors of religion and the assaults of the elements (tempests and hail-storms) came over them; they were defeated, and hunger, cold, and the sword of the Greeks completed their destruction. Several tribes pursued their course into Asia Minor, dispossessed of their time. The other tribes, of origin occupy the whole country as far as the Rhine, and even beyond that river. The Cimbri, a mingled race of Gauls and Germans, whom the Gauls called Belgae, occupied the whole northern part of Gaul, from the Seine and Marne to the British channel and the Rhine, from whence they passed over into Britain, where they drove back those Gauls who had made themselves masters of the country at an earlier period, to North Britain (Scotland), where the latter appear afterwards in history under the name of Caledonians (Highland Gaels), and still later, under those of Picts and Scots. These Belgie or Cimbri are in fact the ancient Britons. The Celts in Gaul, though retaining the chief features of those peculiar manners and customs which we have above described, attained a higher degree of cultivation; to which probably their intercourse with the Greeks in Massilia (Marseilles), whose letters they used in writing their own language, and with the Carthaginians, whose armies they frequently served and commanded, contributed in a great measure. But they were then hardly able to resist the Germans who lived on the other bank of the Rhine. Their kindred tribes, the Belgae and Cimbri, and the Britons, who painted their bodies, fought from chariots, and practised polygamy, were more force than the Celts.

Meanwhile the Cisalpine Gauls, as the Romans called them, after having driven one part of the Etrusci south, into the present territory of Tuscany, and another north, into the Rhattian Alps, had taken up their residence in the fertile plains of Upper Italy. Here they declined to intermingle with the Romans for a long time; sometimes in wars which they undertook on their own account, and at others as mercenaries in the service of other nations. But after the first Punic war had been successfully brought to a close, 172 years after the burning of Camillus, the Aventine (in the year 268 B. C.), the vain called some warlike tribes of their brethren over the Alps to their aid. After a destructive war of six years, the nation was compelled to submit to the Romans (220 B. C.). When Hannibal carried the terror of his arms to the gates of Rome, they attempted to shake off the yoke; but the Romans, victorious over the Carthaginians, contented them to submission. Thirty-one years later (189 B. C.)
their kindred tribe in Asia, the Galatians, met with the same fate; they also were vanquished, and their princes became trophies of Dejectus, in whose defence Cicero delivered an excellent oration, which we still possess, was one of these princes at a later period. The ambition of the Romans soon surmounted the Alps also. They had subjected Spain, and it was important to them to have a passage by land, by which they easily could traverse that country. By the subjectivity of the Allobroges and Arverni, the latter of whom were at that time the principal nation in Gaul, the Romans, in the years 128-122 B.C., conquered the southern part of Gaul along the sea, from the Alps to the Pyrenees. The descriptions of the Arverni and their kings show their splendour and have been considerable. They had stately courts, at which even poets were maintained. It is related that they kept dogs both for hunting and for war (like the Spaniards in the West Indies). Soon afterwards, Europe was agitated, from the Black sea to Spain, by the expeditions of the Tustones and Cumbr, nations of German origin. They were joined by many tribes, particularly Gauls, who, from time immemorial, had been connected and mixed with the Cumbr; and they destroyed four consular armies. Rome, the mistress of the world, trembled at the irritation of these barbarians into Italy. Julius Caesar was the hero of the public. In two bloody battles, at Aix in 102, and at Vercell in 101 B.C., he destroyed these nations. Their wives, after having supplicated in vain, that they might be consecrated to perpetual chastity as priestesses of Vesta, killed their children, and then put an end to their own existence. Only that portion of these nations which had reunited in Gaul, to await the issue of the expedition, escaped the general ruin. Forty-three years after this event, Caius Julius Caesar received the proconsulship over the countries bordering on Gaul. He resolved to subject all Gaul, and executed his purpose in less than nine years (58-50 B.C.), in eight bloody campaigns. Caesar found Gaul torn by internal dissensions; enfeebled by the attacks of the Germans, a body of whom, under their king Ariovistus (Ehreff), had passed the Rhine, and many nations, especially the Edui, old allies of Rome, favourably disposed towards him. At Aix (68), by the chivalrous action of the deliver and protector of the Gauls, driving back the Helvetii into their own country, and compelling Ariovistus also to return to Germany. At a later period, he subdued the fierce Belgae, and repelled the incursions of several German tribes. But the warlike spirit of the Gauls was not yet extinguished, and, though no longer possessed of the fierce valour of their ancestors, they had become more ready to imitate the regular warfare of the Romans. When they perceived that the Roman troops were continuously maintained in their country, they became alarmed for their liberty, and rose against their oppressors. They suffered a few losses; but their superiority in the art of war, and the genius and fortune of Caesar (after the sacrifice of a million of Gauls), secured them the final victory. The last great leader of the Gauls, the valiant Ver- cingetorix, after having sustained one of the most remarkable sieges in the records of ancient times in the city of Alesia (now Alise, near Dijon), was compelled, in the year 52 B.C., to surrender to the Romans. Some later revolts proved fruitless. Caesar completed the subjugation of Gaul, and, by means of the money and troops of that country, rendered himself absolute master of the whole Roman empire. The dominion of the Romans in Gaul was confirmed by colonies, and the liberal grant of the Roman citizenship to several Gallic tribes. The religion of the Druids, being suppressed in Gaul by Tiberius and Claudius, gradually retreated into Britain, where, particularly on the small islands near the British coast, they established their mysterious rites, of which, in ancient times, strange and dreadful accounts were current. The Britons also were soon conquered by the Romans. After the extinction of the family of the Cæsars, the Gauls once more made an attempt to recover their liberty, by the aid of the Germans, but it was in vain. After this last effort, they gradually became Roman citizens, and so entirely Romanized, that even their ancient language, the Celtic, was supplanted by a corrupt Latin dialect, retaining, however, a considerable number of Celtic words, especially as roots, which, intermingled with Franks-Germanic words, formed the modern language. About the year 486, the Franks subdued the greater part of Gaul, and put a period to the dominion of the Romans in that country. The ancient Celtic language, though it underwent great alterations, in the course of time, has been preserved in its greatest purity in the Gaelic of the Highlanders, or the Erse in Ireland, and the Celtic-German language (of the Belga and Cumbr) in Wales, Cornwall, and Basse-Bretagne.

Gauls. See Guebres.

Gauze, in commerce, a thin, transparent stuff, sometimes woven with silk, sometimes only of thread. Gauses are either plain or figured. The latter are worked with flowers of silver or gold, on a silk ground, and are chiefly imported from China. Gauses of excellent quality lave, of late years, been manufactured at Paisley.

GAY, John, an eminent English poet, was born at or near Barnstaple, in 1689, and, after an education at the free-school at Barnstaple, apprenticed to a silk-mercer in London. He showed such a dislike to trade, that after a few years his inclinations were cancelled by agreement, and he devoted himself to literature. In 1711, he published his Rural Sports, which he dedicated to Pope. This compliment introduced them to each other, and proved the foundation of their friendship. In 1712, he accepted the office of secretary to Anne, Duchess of Monmouth, which left him at leisure to pay his court to the muse, and his pleasant mock-heroic poem, entitled Trivio, or the Art of Walking the Streets of London, was published in the same year. In 1714, his caricature of Ambrose Phillips's pastoral poetry was published, under the title of the Shepherd's Week, and dedicated to lord Bolingbroke, who, with the Tory party then in power, much befriended the poet. By his interest he was appointed secretary to the earl of Clarendon, in his embassy to the court of Hanover; but the death of the queen and the succession of George I put an end to his prospects. In 1715 appeared his burlesque drama of What 'dye Call it? which was followed by a farce, in conjunction with Pope and Arbuthnot, called Three Weeks after Marriage, which altogether failed. In 1720, he published his poems by subscription, by which he secured a thousand pounds, and a present of South sea stock, from secretary Craggs. In 1723, he produced his tragedy of the Captives; and some instances of court favour encouraged him to employ himself in his well-known Fables, written professedly for the instruction of the duke of Cumberland, and published with a dedication to that prince in 1726. This performance exhibits great ease of narration, and much lively and natural painting. His Beggar's Opera, the notion of which
seems to have been afforded by Swift, was first acted in 1727, at Lincoln's-inn Fields, having been previously refused by the manager of the Italian opera; its chief merit was to ridicule this Italian opera; but the spirit of the poet rendered it a unique performance, from the mixture of nature, pathos, burlesque, and satire which it contains. It ran for sixty-three successive nights, and transformed the actress who represented the heroine into a duchess, but the manager of the opera implored in vain lord chamberlain refused to license for performance a second part of it, entitled Polly. This resentment induced his friends and the party in opposition to come forward on its publication with so handsome a subscription, that his profits amounted to £2000, whereas the Beggar's Opera had gained him only £400. The duke and duchess of Queensberry took him into their house, and managed his pecuniary concerns. He was soon after seized with dejection of spirits, but enjoyed intervals of ease sufficient to enable him to compose his sonata of Acis and Galatea, and the opera of Achilles. He died in 1737, and was interred in Westminster abbey. His monument contains an epitaph by Pope. Among his smaller pieces, his two ballads of All in the Downs, and 'Twas when the Seas were roaring, are much admired.

GAZA, THEODORE; a successor of Emmanuel Chrysoloras of Constantinople, and the language and literature in the West. He came a fugitive, after the capture of Constantinople, through Turkey to Italy, and there speedily acquired a thorough knowledge of the language of the country. In 1440, he was public teacher at Ferrara, and, in 1451, pope Nicholas V. invited him, with other learned men, to Rome, where cardinal Bessarion took him into his suite. After the death of Nicholas, king Alphonso invited him to Naples. When death had deprived him of this patron also, he returned again to Rome. Here, however, he was so mortified by the smallness of a reward given him by Pope Sextus IV., for a dedication, that he withdrew to Ferrara, and from that place to Calabria, where he died, in 1478. Gaza laboured for the diffusion of Greek literature not only by teaching, but also by his writings, and especially by Latin translations of the Greek classics. His chief work is a translation of the writings of Aristotle on Mechanics.

GAZELLE; a town of Palestine, about a mile from the Mediterraneum sea; forty-four miles south-west Jerusalem; lon. 34° 40' E.; lat. 31° 25' N.; population, 5000. It is often mentioned in Scripture, and was formerly a magnificent city, and strongly fortified. It is now much reduced from its ancient grandeur. The environs are exceedingly fertile, and produce pomegranates, oranges, dates, and flowers, in great request even at Constantinople. Here is a manufacture of cotton, which employs 500 looms in the town and neighbourhood. There are likewise great quantities of ashes made by the Arabs, and used in making the manufacture of soap; but this manufacture has declined. Gaza, at present, is a large village, divided into two parts, called the Upper and Lower. Both of these parts, taken together, are now called Gazara; and the upper part, where the castle is situated, has the same name; but the lower part, is, by the Arabs, distinguished under the name of Haret el Segiyei.

GAZELLE. See Antelope.

GAZETTE; a printed account of the transactions of all the countries in the known world, in a loose sheet or half sheet. This name, in England, is confined to that paper of news published with authority of the government. The first gazette in England was published at Oxford, November 7, 1665. See Newspapers.

GAZETTEER; a geographical dictionary. The first work of this kind, with which we are acquainted, was that of Strabo at Byzantium, 2d ed. It lived in the beginning of the sixth century. We have only an abridgment of it. The first modern work of the kind is the Dictionarium Histoire-Geographicum (Geneva, 1565), by Charles Stephens, with additions, by N. Lloyd (Oxford, 1670, and London, 1686). The works of L. V. de Lescar (Lexicon Geographicum, and geographical Dictionary), of Drury, and Baudrand (Geogr. Ordine Literarum Dispos., 1682), are all of the strongest errors. Those of Maty (1701), Thomas Cornelle (3 vols., fol. 1708), and Savonarola (1713), were based on the former, with additions and corrections. The Dictionnaire Geographique, Historique et Critique, of La Martiniere (Hague and Amstelodam, 1756, 10 vols., folio, Paris, 1708, 6 vols.), superseded all that had gone before it, though it retained many errors. An abridgment of it by Lavoduc, under the assumed name of Pougiere, has continued to be republished in France till the present time. The Geographisch-Statistisches Handworterbuch (1833) of the late eminent German geographer Hassel (1817, 2 vols., with a supplement of two volumes) is the result of laborious and judicious investigations. The Universal Gazetteer by trouttewell (London, 1808, 4 vols. 4to), and the Edinburgh Gazetteer (6 vols., 8vo, 1817—1829) are the principal English dictionaries of foreign matter, though without errors, is a valuable work. An abridgment, in one volume (1829), professes to be brought down to the time of its publication, but does not in all instances bear marks of revision. The most valuable and recent French gazetteers are the Dictionnaire Geographique Universel, published at Paris. The first volume appeared in 1823 (chez Kilius et Piquef), the seventh in 1830. Among the contributors are Depping, Klapproth, the Lapiés, Rémusat, Walcken, and Warden. A. von Humboldt and the late M. Malte-Brun have also assisted in the work. The American Gazetteer of Mr. J. E. Worcester (second edition, Boston, 1823, 2 vols., 8vo), displays the industry and accuracy of its editor in a favourable light. It is particularly valuable for America.

GEARING is the connexion of one toothed wheel with another.

GEBEL; a corruption of the Arabic djebel (mountain), appears in many geographical names, as Gebel, Amar, &c. See Gibel.

GEBER; an Arabian philosopher, who, according to Leo Africaeus, lived in the eighth century. He is said to have been a Greek by birth, and to have apostatized from Christianity to Mohammedanism. His writings relate to astronomy and chemistry, or rather alchemy, on which last subject his authority was so great, that he was styled the master of masters in that art. A Latin translation of his Commentary on the Almagest of Ptolemy was printed at Nuremberg, 1623, and his alchemical works were published in Latin, by Golius, under the title of Lapis Philosphorum, and an English translation of them by Robert Russell appeared at Leyden in 1668 (8vo). Geber corrected many errors in the astronomy of the ancients, and described chemical instruments and operations with greater accuracy than his predecessors. Vulgar ignorance ascribed to this philosopher the character of a magician, on which Naudé remarks, that, from the catalogue of the works of Geber, given by Gesner, it may be concluded he understood every thing except magic.

Another philosopher, named Gebier, is supposed to have been a native of Seville in Spain, and to have flourished about 1090. These individuals have been improperly confounded by some writers.
GEBIRGE. See Guebers.

GEBIRGE, a German word, the collective noun of Berg (mountain), signifying a chain or family of mountains, appears in many geographical names, as Riesengebirge (mountains of giants), Erzgebirge (ore mountains).

GECKO; the local name of a small species of lizard, very common in the Levant, where it is supposed to poison persons who eat provisions over which it has crawled. A peculiar acrid muscus is secreted by glands on the under surface of the toes, which is said to possess a slight blistering property when applied to the skin, and to be otherwise poisonous. There is, in reality, little foundation for the fears which are entertained of this little reptile, whose chief occupation is hunting flies, mosquitoes, and other troublesome insects, which constitute its proper food. The soles, or rather the inferior surface of the toes, is divided into a kind of lamelle, by means of which the animal is enabled to exhaust the air under the foot, and thus adhere forcibly to any dry surface which may be placed. In this manner, it courses over perpendicular walls, and walks in perfect safety inverted on a ceiling. Much variation in the disposition of these curious suckers is observable, and has afforded M. Cuvier characters for several very good divisions of the genus. The pupil of the eye is very large, dilating and contracting in the same manner as those of the feline race among quadrupeds. The teeth are extremely small, and close set in the jaws. On the inferior surface of the thighs of some species are ranges of pores, and the skin of all the species is covered with rough scales and tubercles. Many of them are decorated with the most beautiful colours, as the G. inunguis, ocellatus, and cepedii. G. Mauritanica, the common species of the south of France, &c., is of a deep grey colour; the head rough; the body covered with tubercles arranged in clusters; scales under the tail similar to those underneath the belly. The appearance of this animal is disgusting. During the day, it lies hid in damp and obscure places, sallying forth in the evening to prey upon insects, which it pursues with great rapidity, uttering from time to time a short, sharp chirp. In Italy, the gecko is called terrentola, in Provence, tarente, and by the Romans it was called tarentula. They have laid many superstitions upon geographical lizards. The gecko of the Levant, and Egypt, the lacerta gecko of Linne, is smooth, reddish grey, dotted with brown; scales and tubercles very small. At Cairo, this animal is generally seen crawling over walls and ceilings at dusk, and, during the day, lies hid behind furniture, and in dark, retired places. The natives call it abu bari (father of the leper). Other species are described, inhabiting Madagascar, which have the sides of the tail crested or fringed, as, for instance, the G. fimbririus, or fano-cantrata of the natives of that island, where it is much dreaded, but without reason.

GEDEON ALONAZ, a Roman Catholic divine, was born in the county of Banff, Scotland, in 1737. At the age of twenty-one, he was sent to the Scottish college at Paris, and, returning to Scotland in 1764, officiated as priest among the Catholics in Angus. In 1779, the university of Aberdeen granted him the degree of L.L.D. He was the first Catholic, since the Reformation, to whom it had been assigned. About this time, he repaired to London, with a view of obtaining facilities for his scheme of a new English translation of the Old and New Testament. In consequence of the known opinions of doctor Geddes in regard to the pleatory inspiration of the Scriptures, and the Divine nature of Moses, his work met with much censure, and his own immediate superiors sus-

pended him. In 1797, he published the second volume of his translation, which, distilling sacred latitude, produced similar censures from both Catholics and Protestants. He was in the midst of a translation of the Psalms, when he died in 1808, after a very painful illness. This learned, but eccentric divine wrote many tracts, of more or less power, in vindication of his peculiar notions and opinions, as well as some indifferently versified. His disposition was truly philanthropic and benevolent, and his wit and vivacity contributed greatly to the delight of the social parties in which he mixed. He was a uniform advocate for uncontrolled freedom of opinion and of discussion. He extended his good will to all sects, and was disposed to grant all others every privilege which he claimed for himself. See Good's Life of Geddes.

GEDEK, FREDERIC; a German scholar who did much for the advancement of education. He was born in 1754, at Boberow, a village near Lentzen, in Brandenburg. In 1771, he went to the university of Frankfurt, and, in 1779 became a student of a gymnasium in Berlin. He was transferred to another gymnasium of the same city, where he died in 1803. His zeal to promote education was untiring, and the north of Germany is deeply indebted to him for his services. His Readers and Chrestomathies in several languages have long been considered the best. His works contain an innumerable mass of useful ideas.

GEHENNA. See Tophet.

GEHLE, JOHN SAMUEL TRAUGOTT; a German mathematician, was born at Gorlitz, November 1, 1751, where his father was burgomaster. He was educated in the gymnasium there, and studied natural science and mathematics, and afterwards law at Leipsie. In 1774, he delivered private lectures on mathematics; in 1777, he received a doctorate of law; in 1783, he was made a counsellor at Leipsie, and, in 1786, a member of the supreme court. He died October 16, 1795. Of his many learned treatises, we mention especially his Dissert. Historia Logarithm. Naturalium Primarum (Leipsie, 1776). The Physikalische Worterbuch (Dictionary of Natural Philosophy), a work which is a model in its kind (1787—1795, 5 vols.), bears Gehler's name. Of this dictionary, Brandes, Gmelin, Pffaff, Horner, and Muncke (under the superintendence of the latter) have lately published a new edition, adapted to the present state of the science. It is a work of uncommon excellence.

GEISTIS (from the Greek γη, the earth); a name applied, by the Germans, to that part of physical geography, which relates to the knowledge of the solid land. It comprises the following divisions: 1. descriptive, or the geography of islands, which treats of islands and peninsulas, their extent, situation, and origin; whether formed by the influence of fire or water; separated from the main land, or only projections of coral cliffs; 2. orographical, or the geography of mountains, giving an account of the elevations both in the sea and on land, their extent, connexion, and difference (as consisting of ice and snow, glaciers, volcanoes, or filled with caves), &c.: 3. orycological, describing mountains with reference to their formation, age, and component parts; 4. planological geography, relating to the plains, valleys, and gentle slopes; 5. theetical geography, which treats of the division of the earth, issues, veers, strait, veins, &c.

GELATINE, in chemistry, is one of the constituent parts of animal substances, and may be obtained by repeatedly washing the fresh skin of an animal in cold water, afterwards boiling it, and reducing it to a small quantity by slow evaporation and allowing it to cool. It then assumes the form of jelly, and
becomes hard and semitransparent. It is a principal ingredient both of the solid and fluid parts of animals, and is employed in the state of glue, size, and sizing. Gelatine is used in a new kind of bread, called pain animalisé, now manufactured in Paris. It has been tried in France with success; and beautiful loaves of bread, made in this way, are now sold in Paris at a much lower price than bread from wheat flour. The gelatine is so purified as to impart no unpleasant flavour, and the potato bread thus manufactured, is as agreeable as it is wholesome. As a cheap, nutritious, and useful article of food for the poor, the potato bread thus made is unequalled. A large quantity of the biscuit sent out with the French expedition to Algiers was prepared in this way.

GELD; an Anglo-Saxon word, signifying money or tribute; also a compensation for a crime. Hence vergeld was the value of a man slain, and orsgeld, of a beast.

GELEE, CLAUDE. See Claude Lorraine.

GELLERT, CHRISTIAN FURCHTENOTT; a German poet, was born 1715, at Haynichen, a city near Freiberg, in the Erzgebirge, where his father was a preacher. On account of the narrow circumstances of his father, who had a family of thirteen children, Gellert, at the age of eleven, was obliged to support himself by copying. His first poetical attempt—a poem on his father's birthday—he made at the age of thirteen. In 1729, he was sent to the royal school at Magdeburg. In 1734, he began the study of theology at Leipsic. Better health, stronger lungs, and a better memory, would have made him one of the most distinguished preachers in Germany. He assisted Gottsched in the translation of Bayle's Dictionary. He also wrote fables, stories, didactic poems, with several prose essays, besides comic and stylic pieces intended for the improvement of the stage. With a view of adding to the dignity and utility of romance, he wrote his Schwedische Grossin (Swedish Countess). He was much afflicted at times with hypochondria. For twelve years, he had lectured in the university, when he was appointed extraordinary professor of philosophy there, in 1751. He now read lectures, with great applause, on poetry and eloquence. The melancholy, to which he was subject, however, made him renounce poetry, and devote himself to lectures on morals. During the seven years' war, great numbers of strangers visited Gellert, who had become the favourite of the nation. Frederic the Great was so much pleased with his conversation, that he called him le plus raisonnable de tous les savans Allemands. Gellert received numerous presents and other proofs of regard both from his scholars and from strangers, and was surrounded with scholars of all nations, and was as surrounded with most of the external means of happiness; but his health grew continually worse, and his disorder would not yield to medicine. He died, December 13, 1769, aged 55. His private character was highly amiable. No living poet could have shown more readiness to allow the merits of others. Though not a genius of the first class, he was an agreeable and fertile writer, the poet of religion and virtue. In his fables and spiritual songs, he has displayed the whole force of his genius. The former are characterized by a delicate vein of humour, with a refined and polished style; the latter, are fond of the serious, didactic style, and sometimes of the tragic. His verses are soft and harmonious. For romance he had no talent, as is shown by his Swedish Countess. His theatrical pieces, though better, are still a failure. His letters, for the time when they were written, are worthy of praise, though they are not wholly free from the faults of the age. The best and most complete works appeared at Leipsic, 1784, in ten volumes.

GELLÉS, AUGUSTE; a Roman author, who lived under Adrian and the Antonines. He studied rhetoric at Rome, and philosophy at Athens, and afterwards received the dignity of a centurion. He is the author of the Historiae Augustae. In the German language, full of interesting observations, particularly for philologists and critics, which he collected in the winter nights, during his residence at Athens, from the best Latin and Greek authors. The following are the best editions: Paris, 1585, by Henry Stephanus; Paris, 1691, 4to, (in Unum Delphinum); Amsterdam, 1661, 12mo, by Elzevir; Leyden, 1666 (cum Notis var.); Leyden, 1706, 4to, by Gronovius; Leipsic, 1702, 2 vols., by Conradi, &c.

GELON; son of Dinomenes, tyrant of Syracuse of which he usurped the sovereignty about 491 or 500 B. C. He embellished the city and increased its population. During the Delian war, and while Athens, Sparta and Xerxes were striving for supremacy in the East, Gelon, with his allies, decided to make a new ally to himself. This ally was the great island of Sicily, from which he had seized a large portion. He then marched into Italy, and with his allies, concluded an alliance with Carthage, and to the war, which was now on, he gave a new impulse. In 480 B. C., he was one of the leaders in the battle of Marathon. Gelon then refused the assistance of the Greeks, and sent ambassadors to Carthage, to conclude a league with them, but he was not then aware that Xerxes had induced the Carthaginians, while he was attacking Athens, to make an attack on their settlements in Sicily and Italy. Hamilcar, the king of the Persians, landed in Sicily, and as Gelon was not in the city, he made himself its protector. Gelon then received the news of the arrival of the Carthaginians, and resolved to fight them, and to give battle to them. He advanced his army to meet the Carthaginians, and marched against them with 10,000 cavalry and 20,000 foot, and was defeated by them. He was defeated by them, and was killed in the battle. The news of his death spread through the whole of Sicily, and the people became disheartened. This remarkable battle happened on the same day on which the Greeks were victorious at Marathon. It is celebrated in an ode by Pindar. The bootys were immense, and Gelon offered the Carthaginians peace only on condition that they should pay 200 talents of silver, erect two temples for preserving the conditions of peace, and abolish for ever human sacrifices. His next ambition was to obtain the title of royalty. For this purpose, he summoned a meeting of the people, and declared his intention of resigning his high power, and offering his throne to the highest and most able person, and to the people. This person would be the preserve of Syracuse. The royal title was unanimously conferred upon him, and the people persisted in compelling him to accept it. A statue, which represented him in a citizen's dress, was erected in his honour, and the place where he was buried became a place to which the people went to pay their respects. The characteristics of Gelon's administration were the following: Ever striving to make his people happy, he died
after a reign of seven years. He was succeeded by his brother Hiero.

GEMINI; the Twins (ii); one of the northern signs, being the first sign of the zodiac, and the last of the spring signs.

GEMS, or PRECIOUS STONES, are sometimes found of regular shapes, and with a natural polish, and sometimes of irregular shapes, and with a rough coat. The first sort may be considered as of the pebble kind, and are said to be found near the beds of rivers, after great rains; the others are found in mines, and in the clefts of rocks. The gems of the first were what the ancients most usually engraved upon. These are commonly called intaglios; and they are mostly of a long, oval figure, inclining to a point at each end, convex as well on the engraved face as on the others, with a ridge running from end to end on the under side, which is hereby, as it were, divided into two faces; both which are also, though not so distinctly, parted from the upper face by another ridge running quite round the oval. The stone most commonly found engraved is the beryl. The next is the jacinth, and sardonyx. The chrysolite is but rarely found engraved, as are also the crystal, or Oriental pebble, the garnet, and the amethyst.

The following is a general list of what are usually called precious stones: the beryl, red, yellow, or white; emerald, green; jacinth, of a deep, tawny red; chrysolite, of a light grass-green; crystal, or Oriental pebble, of a silvery white; garnet, of a deep red, claret colour; amethyst, purple; diamond, white; ruby, red, or crimson-coloured; emerald, of a deep green; aqua marina, of a bluish, sea green, like sea water; topaz, of a ripe citron yellow; sapphire, of a deep sky blue, or of a silver white; cornelian, red or white; opal, white and changeable; vermillion stone, more tawny than the jacinth. All these stones are more or less transparent. The following are all opaque: the cat's eye, brown; red jasper, called also thick cornelian, of the colour of red ochre; jet, black; agates of various sorts; blood-stone, green, veined, or spotted with red and white; onyx, consisting of different parallel strata, mostly white and black; sardonyx, of several shades of brown and white; agate-onyx, of two or more strata of white, either opaque or transparent; alabaster, different strata of white and yellow, like the agate-onyx; toad's eye, black; turquois, of a yellowish blue inclining to green; lapiz, lazuli, of a fine deep blue.

Of most of the species beforementioned, there are some of an inferior class and beauty. These are commonly called, by jewellers, Occidental stones. They are mostly the produce of Europe, and found in mines or stone quarries; and are so named in opposition to those of a higher class, which are always accounted Oriental, and supposed to be only produced in the East.

The onyx, sardonyx, agate-onyx, alabaster of two colours or strata, as also certain shells of different coats, were frequently engraved, by the ancients in relief; and these sorts of engravings are commonly called cameos. They also sometimes ingraven a head, or some other figure in relief, of gold, upon a blood-stone. Besides which there are some antiques, mostly cornelians, that are covered with a stratum of white. This stratum has by some been looked upon as marble, but it was really a sort of alabaster, which was laid on. The stones esteemed the best for engraving upon, were the onyx and sardonyx; and, next to them, the beryl and the jacinth. The ancients engraved most of their stones, except the onyx and the sardonyx, just as they were found; their natural polish excelling all that can be given by art; but the beauty of the several species of onyx could only be discovered by cutting. The merit of intaglios and cameos depends on their erudition, as it is termed, or the goodness of the workmanship, and the beauty of their polish. The antique Greek gems are most esteemed; and, next to them, the Roman ones of the times of the higher empire. Lapidaries employ a considerable quantity of diamond in powder, which they use with steel instruments, to divide pebbles and precious stones. The small pieces of diamonds, of which the sea is well supplied, are worth twenty-eight shillings a cart. The use of the diamond in this way is very extensive. Had nature withheld the diamond, the pebble, the agate, and a variety of other stones, would have been of little value, as no other substance is hard enough to operate upon them. In this way, rock crystal from Brazil is divided into leaves, and ground and polished with diamond dust for spectacles and other optical instruments.

Gems, Artificial. The great value of the precious stones has led to artificial imitations of their colour and lustre, by compositions in glass. In order to approximate to the refractive power of native gems, a basis, called a paste, is made from the finest flint glass, composed of selected materials, combined in different proportions, according to the preference of the manufacturer. This is mixed with metallic oxides capable of producing the desired colour. A great number of complex receipts are in use among manufacturers of these articles.

Gems, Imitation of Antique; a method of taking the impressions and figures of antique gems, with their engravings, in glass, of the colour of the original gem. Great care is necessary in the operation to take the impression of the gem in a very fine earth, and to press down upon this a piece of proper glass, softened or half melted at the fire, so that the figures of the impression made in the earth may be nicely and perfectly expressed upon the glass. The yellowish trepoli has been found best adapted for this purpose.

GEM-SCULPTURE; the glyptic art, or lithoglyphics; the art of representing designs upon precious stones, either in raised work (cameos), or by figures cut into or below the surface (intaglios). The former method may have been practised at a very early period, and probably had its origin with the Babylonians, who worshipped the heavenly bodies, and were accustomed to wear figured talismans, which served as symbols of their influences. From them, the custom of wearing engraved stones passed to the Hebrews (Eichhorn, De Gemmis sculptis Hebreorvm, in the Comment. Soc. Gott. rec. vol. ii.). According to others, this art originated in India. The Egyptians cut the hardest kinds of stones. The custom of wearing cut stones as seal rings appears to have been general among the Greeks in the time of Solon. One of the earliest artists in this branch, of whom mention is made, is Mnesarchus, the father of the philosopher Pythagoras, consequently a contemporary of that Theodorus of Samos, who engraved the ring of Polycrates, of which such wonderful stories are told by the ancients. These ancient works were probably intaglios; the artist made use of the lath, the maxim, the astracite, the diamond point, and diamond powder. Respecting the classes of stones the architect used, and the mystical powers attributed to the different kinds, see Belermann's Urim und Thummim, die altesten Gemmen (Berlin, 1824).

Whether the Egyptian scarabæi, and the Graeco-Etruscan imitations of them, are the most ancient specimens of this interesting art, may be doubted on
account of the form of the stones (cut into the shape of beetles). Yet the specimens of the early period of the art are so rare, that we have not sufficient data, for fixing on any class as prior to that just mentioned. The flourishing period of the glyptic art, seems to have been the age of Alexander the Great; but we are able to judge of the works of Pyrgoteles, Apollonides, and Coelus, only from tradition, as there are no works of these masters extant. Pyrgoteles was distinguished for works in relief; and from his time the art may have risen, gradually, to that degree of perfection of which we possess such rich specimens. The artists, some of whose names we do not know, have left us the most perfect works in this branch of art. But the works of greatest value which have come down to us—the onyx, in the chapel at Paris, the apodyterium of Augustus in Vienna, the onyx, at the Hague, representing the apotheosis of the emperor Galba, the head of Julius Caesar (Agincourt's Sculpt. pl. 45)—these, and the Brunswick vase, and the Trivelician and Neapolitan cups, bear no distinguished names. Names of Greek composition were frequently put on engraved stones in the fifteenth century, when the patronage of the Medici revived the taste for gems and dactyliothecas (q. v.), which so powerfully promoted this branch of art under the later Roman emperors. Pompey consecrated the dactyliotheca of Mithridates, as a votive offering, in the capitol; Julius Caesar, six tablets, with six gems, in the temple of Venus Genetrix; and in the later period, the collections of Herodes Atticus, of Vespasian, &c., were celebrated; yet this general taste was not able to preserve the art from decline. We find proofs of this degeneracy in the times of the later emperors, in the numerous class of gems called abrassias (q. v.) and abrassides, in some rare works of the Byzantine period (Dufreane in Leo Diacono; ed. Hase, Paris, 1819, folio, and Raspe's Catalogue of Tassie's Collection, and in some artificial gems of the first centuries. As no use could be made of the material of these works, gems continued to be highly prized, even in the times of the greatest barbarism, and served to ornament the finery of saints, royal bodies, and ceremonial dresses, and thus passed safely through the ages of destruction and ignorance, in which the finest statues were valued as materials for mortar or for building, down to ages which could appreciate their value. If we may judge from the remains which have come down to us, engraved gems seem to have been more common in Byzantium and Constantinople than in the West.

In Plate XXXIX, we have given seven representations of ancient engraved gems.

Fig. 1st represents Bacchus, (done on sardonyx), M. de Boe, in the manuscript catalogue of gems in the collection of the duke of Orleans, has taken this figure for Cleopatra. In truth, its form partakes much of the female, but such is the character that the ancient artists gave to their representations of Bacchus. "The neck," says the abbe Winkelmann, "is like to represent their divinities as youthful, which, besides avoiding the harsh forms that characterize advanced age, gives more unity to the design, as it appears reasonable, in giving a body to divinities, that that body ought to be the most elegant, the most fresh, the most agreeable, and the least material possible." The god appears upon this stone in an attitude which is common on antique monuments, the arm being placed upon the head, which posture was conventional among the ancients as expressive of softness and repose.

Fig. 2.—Mercury (on a cornelian) appears here with the attributes of the god of commerce. He is seated on a sort of rock, a light mantle meets below his neck, and folded round his right arm, falls down upon the hand, which holds the caduceus; and, in his left hand, he holds the purse. Before the god is a cock, and at his feet is a goat. The reverse of the medal of Tiberius struck at Carthage, and another of Lucius Verus struck at Corinth, present Mercury in the same manner, with the sepulchral urn or cist of stone. If it is a rock, it might have reference to navigation, of which he is the protector, and hence named Εὔνοιας, and had temples erected to him on promontories.

Fig. 3.—Cupid upon the waves, a cameo—agateonyx.

Fig. 4.—Terpsichore, (on oriental sardonyx). The figure represented here has been repeated by various artists, and upon different materials. Onessus, Allion, Cronius, have executed it with nearly equal success, probably after some antique statue or celebrated bas-relief; for the ancients, as is commonly remarked, copied, reproduced, and multiplied the chefs d'œuvres of sculpture. Nearly all the antiquarians have taken this figure for that of one of the muses. The baron de Stosh concieves it to be Erato, and the abbe Winkelmann believes it to be Terpsichore. The opinion of the last appears to us to be the best founded. The attitude of the small image placed upon the cippus on which the figure leans, appears to express that the muse presides at the dance; and, in the second volume of the Herculaneum pictures, where each of the muses is represented with its attribute, Terpsichore has the lyre.

Fig. 5.—Dodolian Jupiter. This sardonyx is one of great importance, and is engraved in a fine style. It was formerly in the cabinet of the Elector Palatine, and is at present in that of the duke of Orleans. It has been published, under the name of the Indian Bacchus, by M. Cheron in his collection. It was also given by Montfaucon, in the supplement of his antiquity, where he entitled it Jupiter Saviour. But it is easily perceived that none of these names apply properly to it. The only character recognisable is that of Jupiter, and the wreath of oak with which he is crowned, and which is the attribute of the Dodolian Jupiter, does allude to the fact of that being the character it is intended to express. One of the finest heads known of this god is that seen on the gold medals of Alexander king of Epirus, that M. Duane has caused to be engraved by Bartolozzi. The heads and statues of the Dodolian Jupiter are exceedingly rare, a thing the more astonishing, as that oracle was the most famous of antiquity.

Fig. 6th represents Jupiter overcoming the Titans. This fine cameo is in the museum of the king of Naples, and bears the name of Alkistion. It belongs probably to the time of Alexander the Great. It exhibits an example, perhaps unique, of a fore-shortened group, the ground plan of the figures being a curve.

Fig. 7th represents a Dancing Nymph. This is a beautiful little intaglio, The simplicity and elegance of the figure are truly exquisite. The nymph, perhaps Euterpe, is playing two flutes, while turning on the toe with a graceful ease that puts to shame the pirouettes of modern dancing. Her drapery floats on the air, expressing the circular movement of the figure and agreeably fills the space that would otherwise appear empty. The original gem formerly existed in the Stosch collection. Its age and author are unknown.
The earliest gem-engraver, of modern times, is Vittore Pisanello, who lived at Florence about the year 1406. Among the Germans, Daniel Engelhard, of Nuremberg, was the earliest. He died in 1512. The discovery of some fine specimens in Italy, particularly at Florence, and the display of gems by the Emperor Palaeologus, at the council of Ferrara, in 1438, were perhaps the original cause of the taste of the Medici for engraved stones. The popes and that family were the first patrons of this art in modern times. A Florentine artist, by the name of John, generally called, on account of his great skill, Giovannio delle Corniole, distinguished himself in this early period of the art. But the finest gems which can be ascribed to him, with any confidence, beside the famous cornelian in the Florentine museum, with the portrait of Savonron, bearing the inscription Hieronymus Ferrariensis ordinis predicatorum, propheta, vir et artuætis. This stone, which must have been engraved later than 1498, is given in Agincourt's Sculpture (tab. 48, number 89). Contemporaries and rivals of Giovannio were Nanni di Prospero dalle Corniole, in Florence, whom Francesco Salvati directed in his works, and Domenico Compagnie (dei cameo), a Milanese, whose portrait of Ludovico Sforza, called Moro, cut in a ruby, is still preserved in the Florentine museum. After Benvenuti (dei cameo), V. V. (of which Leo X.) rendered himself famous as a gem-engraver. This art found patrons in all the Italian princes; the number of artists constantly increased, and the sphere of their art was extended. The names of the artists, however, are not generally known, because they were rarely put upon the stones. Many gems, too, are still concealed in the cabinets of the wealthy, or the treasuries of princes. Until these are as accurately described as those of the Ambrosian collection, it will be difficult to obtain a complete general view.

Subjects of antiquity were treated by these artists in preference, and with such ability that it often requires the skill of the most accomplished connesseur to distinguish them from genuine antiques. The dispute concerning the famous seal ring of Michael Angelo is well known. It is not improbable that this cornelian is the work of Pietro Maria da Pesio, as the figure of the fisherman in the exergue marks him as the artist. The ring, however, formerly belonged to the age of Leo X. (Fiorillo, Essays, vol. ii, page 188.) In order to give the gems more completely the appearance of antiques, some artists engraved their names in Greek, but with so little knowledge of the language, that they sometimes betrayed themselves by this artifice. To this time we must ascribe the gems, with the name Pyrgydeus, which Fiorillo endeavours to prove were the works of an Italian of Greek descent (Lascaris).

The art of engraving was also applied to glass and gold. The crystal box of Valerio Belli, the most skilful and industrious artist in this branch during the sixteenth century, deserves particular mention. It was intended by Clement VII, as a present to Francis I., when Catharine of Medici went to Mar- sells in 1533. At present, it is in Florence. Drawings of it are to be found in Agincourt's Sculpture (table 43) and in Cicoerona (ii, table 87.)

The Milanese particularly distinguished themselves in this art. As the work of the prince and citizens of Milan enabled them to propagate this art, Jacopo da Trezza, the same artist who, in 1664, executed, for Philip II., the famous tabernacle of the Escorial, made the first attempts at engraving on the diamond, in Milan. The greatest cameo work of modern times is the stone in the Florentine museum, seven inches in breadth, upon which Cosmo, grand duke of Tuscany, with his wife, Eleonore, and seven children, are represented. A Milanese, John Anthony de Rossi, who was a contemporary of the Saracchi family (about 1570), is the artist. The Saracchi were five brothers, and the crystal helmet of Albert of Bavaria is a proof of their skill. See Cicogna's Storia della Scultura di Firenze, edizione di Prato, v. p. 446.

The first traces of gem-engraving in Germany are found in the fourteenth and fifteenth centuries, in Nuremberg and Strasburg. Natter, himself a distinguished artist in this branch, has given an account of his predecessors in his Traité de la Méthode Antiqüe du gravier en Pierre Fine, compare avec la Méthode moderne, by himself. This, together with other himself, Pichler and Marchant are considered as the restorers of this art in that country. Faustus and Hecker are also esteemed. It is still practised with great success by several artists, and by Polish Jews with particular skill, but only for coats of arms. In this country, James Passie (q. v.) who died in 1799, has most distinguished himself as a gem-engraver. The most eminent artist of the present age is, perhaps, Berini, a native of Rome, who with Cervara and Giromelli, at Rome, and Putinati at Milan, has produced very fine works. Jakob Frischholz's Lehrbuch der Steinschnidekunst (Manual of Gem-Engraving, Munich, 1820) is considered a good work, as well as P. Ritter, Beschreibung von Demantien und der zur Bearbeitung derselben nuthwendigen Apparate (Vienna, 1822, 4to).

GEN DARMES. See Gens d'Armes.

GENEALOGY. The systematic account of the origin, descent, and relations of families is an auxiliary of historical science. Genealogical know-ledge becomes important in the personal or legal view, when family claims are to be established. Genealogy is founded on the idea of a lineage or family. Per-sons descended from a common father constitute a family. Under the idea of degree is denoted the nearness or remoteness of relationship in which one person stands with respect to another. A series of several persons, descended from a common progenitor, is called a line. A line is either direct or collateral. The direct line is divided into the ascending and descending. As far as the seventh degree, particu-lar names are given to the progenitors by the civil law (pater, avus, provus, avus, atenus, tribunus, castrense, nearest, and proterne, nepos, protene, ab nepos, ateneus, trineos, protene-

"GEM-SCULPTURE—GENEALOGY."
with them stand the tables of disputed succession, which represent several lines of a family, or several collateral families, in order to deduce their rights of succession from the genealogies of the relation ship. Synchronical tables consist of the genealogies of several families placed together, in order to compare, with facility, relationships, marriages, divisions of inheritance, &c. Historical genealogical tables differ from mere genealogical tables, as they store the name, and sort them, as it were, into their proper series; on the other hand, historical genealogical tables also show the history of the members. There are also tables which show, besides the succession of the families, the diminution or increase of the family property. The common form of genealogical tables places the common stock at the head, and shows the degree of each descendant by lines. Some tables, however, have been constructed in the form of a tree, after the model of the canonical law (arbor consanguinitatis), in which the progenitor is placed beneath, as if for a root—a form in which the ancient genealogists delighted. Genealogical knowledge was most important in the middle ages, when the nobility was distinct from the other classes, laying exclusive claim to certain offices, situations, &c., and every one, who wished to obtain them, had to show a certain number of ancestors. Then arose the passion of referring to the remotest antiquity, or at least to Roman families, for the founders of the royal families of Europe. See Gatterer (Göttingen, 1778), Puter (Tabb. Geneal. Gottingen, 1768, 4to), Koch in Strasburg, and Voigtel (1810), first carried genealogy to a higher perfection. See also the article Herodity.

**GENERAL ISSUE, in law,** is that plea which denies at once the whole declaration or indictment, without offering any special matter, by which to evade it. It is called the *general issue,* because, by importing an absolute and general denial of what is alleged in the declaration, it amounts at once to an issue, or fact affirmed on one side, and denied on the other. This is the ordinary plea upon which most causes are tried, and is now almost invariably used in all criminal cases. It puts every thing in issue, that is, denies every thing, and requires the party to prove all that he has stated. It is a frequent question, What can be given in evidence by the defendant upon this plea? and the difficulty is, to know whether the evidence may be given upon the general issue, or must be specially pleaded upon the record. In many cases, for the protection of justices, constables, excise officers, &c., they are, by act of parliament, enabled to plead the general issue, and give the special matter for their justification, under the act, in evidence.

**GENERAL OF AN ARMY,** in the art of war, he who commands in chief.

*General* is also used for a particular march or beat of drum, being the first which gives notice for the infantry to be in readiness to march.

*General* is also used for the chief of an order of monks.

*GENERATED* is used by mathematicians to denote whatever is formed by the motion of a point, line, or surface. Thus a line is said to be *generated* by the motion of a point; a surface, by the motion of a line; and a solid, by the motion of a surface. The same term is also sometimes used in a similar sense in arithmetic and algebra. Thus 20 is said to be generated by the two factors 4 and 5, or 2 and 10; a b, of the factors a and b, &c.

**GENERATION.** In ancient chronology, limits sometimes divided according to generations, or the mean duration of human life. Herodotus reckons 100 years to three generations. Other writers take 30, 28, 22; Dionysius of Halicarnassus, 27 years, for a generation. The number commonly adopted is 30 years.

**GENERAL NAME, in natural history:** the word used to signify all species of natural bodies which agree in certain essential and peculiar characters, and are therefore all of the same family or kind; so that the word used as the generic name equally expresses every one of them; and some other words expressive of the peculiar qualities of figures of each are added, in order to denote them singly, and make up what is called the specific name. Thus the word *rosa,* or *rose,* is the generic name of a whole series of flowers which are distinguished by the specific names of the red-rose, the white-rose, the apple-rose, &c.

**GENEZARETH, or GENEZARETHI** (called also Chinanareth, Cinnereth, Genesis, sea of Galilee, and sea of Tiberias); a lake in Palestine, twenty-eight miles east of Acre, and forty-five north of Jerusalem. It is seventeen miles long and six broad. The Jordan passes through it. Its waters are sweet and transparent, and abound with fish. "Its broad and extended surface," says doctor Clarke, "covering the bottom of a profound valley, environed by lofty and precipitous eminences, added to the impression of a certain reverential awe under which every Christian pilgrim approaches it, give a character of dignity unapproached by any similar scenery.

**GENESEE**—Lake of America, which rises in Pennsylvania, and runs north through New York, and flows into lake Ontario, at Port Genesee, six miles below Rochester. At the distance of six miles from its mouth are falls of ninety-six feet, and, one mile higher up, other falls of seventy-five feet. Above these, it is navigable for boats nearly seventy miles, where are two other falls, of sixty and ninety feet, one mile apart, in Nunda, south of Leicester. An aqueduct for the Erie canal crosses this river at Roches ter. There is a tract, at the head of Genesee river, six miles square, embracing waters, some of which flow into the gulf of Mexico, others into Chesapeake bay, and others into the gulf of St Lawrence. This tract is probably elevated 1600 or 1700 feet above the Atlantic ocean. This river waters one of the finest tracts of land in the state. Its alluvial flats are extensive and very fertile.

**GENESIAS**—the Hebrew name for Homer, is nearly the same as generation, being the formation of a line, surface, or solid, by the flowing of a point, line, or surface. Here the moving line or figure is called the *described,* and the line in which the motion is made, the *directed.*

**GENESIS (Greek);** creation, birth, origin. The first book of the Pentateuch has been so called by the Alexandrian translators, because it treats of the creation of the world.

**GENETHILLAISON**; a birth-day poem.—*Genath- tiatic;* one who predicts the fortune of an infant from the situation of the stars at the moment of its birth. See Astrology.

**GENEA,** a Protestant canton of Switzerland (q. v.), with 9137 square miles, and 53,459 inhabitants; of these 37,700 are Calvinists, 15,800 Cathol ics, 350 Lutherans, and 60 Jews. The revenue of the canton, in 1829, was 1,558,512 Swiss guilders; expenditure, 1,516,220 guilders. The city of Geneva, on the lake of the same name, the Swiss Athens, is well built and fortified, enriched by commerce and manuf actures, and contains 25,000 inhabitants, in about 900 houses. The Rhone, which passes through the lake of Geneva, enters the city itself, and divides it into three unequal parts, connected by bridges. In the most flourishing period of her trade, Geneva contained 700 master watchmakers, and about 6000 workmen. At the present time, there are only 2800 persons engaged in this business. who make annually
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70,000 watches (of which half are of gold), valued at 2,150,000 Swiss francs. The rest of the workmen, employed in the working of metals, are engaged in the manufacture of watchmaker's tools, and of mathematical and surgical instruments. The manufactures of these factories depend greatly upon foreign orders. Besides these are factories for chinze, woolens, muslins, gold lace, silks, and porcelain. The advantageous situation of the lake of Geneva is favourable to commerce, but the vicinity of France encourages smuggling. Geneva acquired, by these means, so much wealth, that she had 129,000,000 livres invested mostly in French funds, part of which was lost in the French revolution.

In the middle ages, Geneva was subject to a bishop and a count, who disputed with each other for their respective privileges. The count's right came, at last, into the hands of the dukes of Savoy, who soon brought the bishop over to their side. The citizens had also many privileges from the emperors. Hence arose disputes; and, as the dukes were pressed by the French on the one side, and the Genevese supported by the Swiss on the other, the former could not easily make good their claims. In 1534, the city released herself from the ducal government, and, in 1536, passed a law from the last dukes, and, by open adopting Protestant doctrines. Several families, adherents to the duke, were banished. The claims of the dukes, for a long time, gave rise to contentions; and, in 1602, the reigning duke made a last attempt to get the city into his power by surprise. The attempt failed, and an annual festival was instituted on the 12th of December, to commemorate the escadale. In 1603, by the mediation of Bern, Zurich, and Henry IV. of France, a permanent accommodation was effected with Savoy, by which that power renounced all her claims, and the three mediators guaranteed to Geneva a free government. This constitution was a mixture of democracy and aristocracy. The citizens formed the general or sovereign council, which had power to make laws, and to decide in matters of most importance to the public weal. A great council, consisting of 200, and subsequently of 250 members, was elected from among the Frenchlandish, or burgher council. If twenty-five members was chosen, under the presidency of the syndic. These had the executive power, the care of public treasure, and the management of ordinary daily business. As early as 1536, it was determined that nothing should come before the great council till the smaller had signified their approbation, and that the great council must first approve whatever was presented to the burgesses. This form the government retained for a long time, to the entire satisfaction of the people, until it degenerated into an oligarchy; particular families monopolizing the most important offices, and treating the citizens as their dependants. Signs of the disaffection thus produced discovered themselves, in the course of the eighteenth century, very frequently, in violent eruptions, and in the demand for an amendment of the constitution. The complainants were denominately representatives, and the adherents of the council families, negatives. The evil was increased by the old constitution of Geneva, according to which the inhabitants were divided into three classes, viz., the citizens, or such burgesses as were, by birth, entitled to citizenship, and were eligible to all offices; the bourgeois, or such commoners as sprung from families recently introduced from abroad, who might attend the council of the whole; and, lastly, the householders, or commoners at large —such as had no right of citizenship whatever, and whose descendants were styled natives, simply. All these classes had cause for discontent; and, on this very account, the small council was able to sustain itself longer in its usurped privileges. In 1781, they broke out into a violent rupture. The strife was terminated by the mediating powers, especially the French, who found it very important to sustain the experiments in favour of the oligarchy; but the consequence was, that many families emigrated to Constance, to Neufchatel, England, and America, carrying much of the skill and industry of the country with them. A later revolution, in 1789, placed the rights of the citizens on a better footing. Many of the burgesses exiles returned; but the French revolution now broke out, and, during the reign of terror, in 1792, Soulaie was appointed by his government resident at Geneva, and acted over there the horrible scenes then taking place in France. Many citizens, without form of law, lost home, property, and life. After this storm succeeded a few years of tranquillity. In 1798, French troops were quartered in the city, which was now incorporated with the republic of France. Geneva was the capital of the department of Leman, December 30, 1813, Geneva capitulated to the allies. Since then, it has formed the 22d canton of the canton of Geneva.

The constitution of Geneva is aristo-cratico-democratic. A council of state, composed of four syndics of the present, and four of the past year, with twenty-one counsellors of noble rank, possess the executive power. The legislative authority is vested in a representative assembly of 276 members. The Genevese are as much distinguished by their interest in science as by their public spirit; and it excites admiration to see how much they have done, and are still doing, with their limited means, for the interests of learning and the advancement of society. This patriotic spirit extends even to the labouring classes, who, to give an instance, in 1811, when Decandole wished for a botanic garden, offered voluntarily to build, without remuneration, a hot-house, &c., and to furnish the necessary glass at their own expense. The university, founded in 1368, was revived in 1538 by the influence of Calvin and Beza. It has a public library, an observatory, built in 1770, an academic museum, founded in 1795, by Pictet, and comprising Saussure's mineral collection, Haller's herbaria, Pictet's philosophical apparatus. The society of arts have appropriated 50,000 francs to the erection of a splendid edifice, where the cabinets of natural science and of the arts might be deposited. In 1825, also, a new philanthropic was built, after the model of that in New York. In 1820, an agricultural school for poor children, like that at Hofwy, was established at Curra, in the canton of Geneva. Among the objects worthy of notice, in and around Geneva, are, the house in which Rousseau was born; Calvin's tomb, without inscription or monument; Eyward's palace; the iron wire bridge; Ferney, which remains in possession of France, about four miles from Geneva; it is gradually decaying, but the lower apartments are as Voltaire left them; the glaciers of Chamouny, a day's journey from Geneva. The lake, with its picturesque scenery, has been celebrated by several poets, such as Matthiessen, and Lord Byron (in Childe Harold. 1.) Sir Egerton Brydges has even devoted a long poem of two volumes to the subject, (printed but not published in 1811.) It is above forty-one miles long, and its greatest width is about 4½ miles. It is deep, and well supplied with fish, and does not freeze entirely over, although many of the icebergs are so large that the smaller council, nor be invested with public office; and, lastly, the householders, or commoners at large —such as had no right of citizenship whatever, and whose descendants were styled natives, simply. All
GENEVIEVE.—1. St Genevieve; born at Nantes, about five miles from Paris, in the year 423, about the time of Pharamond, the first king of France. St German, bishop of Auterre, observing in her, what he conceived to be an indication of old sanctity, advised her to take a vow of perpetual virginity, which she accordingly did in the presence of the bishop of Paris. After the death of her parents, she went to Paris. The city was about to be deserted, when Attila, with his Huns, broke into France; but Genevieve assured the inhabitants of the old sanctity, if they would seek it by fervent prayers. Attila took his course from Champagne to Orleans, returned thence into Champagne, without touching Paris, and was defeated in 451. By this event, Genevieve’s reputation was established. In a time of famine, she went along the river Seine, from city to city, and soon returned with twelve large vessels loaded with grain, which she distributed gratuitously among the sufferers. This increased her authority, and she was highly honoured by Meroveus and Chilperic. Nothing, however, contributed more to her reputation for sanctity, than the fact, that, from her fifteenth to her fiftieth year, she ate nothing but barley-bread, except that she took some beans every two or three weeks, and, after her fiftieth year, some fish and milk. In 460, she built a church over the graves of St Dionysius Rusticus and Eleutherius, near the village of Châlons. Afterwards, she founded the abbey of St Denis. She died in 499 or 501, and her body was placed in the subterraneous chapel which St Denis had consecrated to the apostles Paul and Peter. Clovis, by her request, built a church over it, which was afterwards called by her name, as was also the abbey that was built after her death. Another church, consecrated to this saint, was built adjoining to the church of Notre Dame. Her relics are preserved in the former. The church celebrates the 3d of January, the day on which she died, in honour of her. With this saint must not be confounded,

2. Another St Genevieve, countess Palatine, in which is related what happened to the innocent dame, who had been persecuted during her absence from her belov- ed Husband.—(Cologne and Nuremberg). “Of all the books belonging to this class,” says Gorres, “the history of Genevieve is undoubtedly the most elaborate and complete; in some parts perfect, and, in its unassuming simplicity, not surpassed by any other work of the kind. It is written in a moving, innocent style, simple, unadorned, and spreading, as it were, around itself a shade of sacred feeling. GENGIS-KHAN. The Mongol conquest was the son of a Mongol chieftain, by the name of Yezon- kai, or Yezonkai, whose jurisdiction extended over thirty or forty clans, but who, at the same time, paid tribute to the Tartar Khans, or Khus, then bearing sway over Eastern Tartary, and the north of China. Gengis Khan was the grandson of the great Ghenghis Khan, the founder of the Khans, or the Hegriz 559, or A. D. 1163—64, and received the name of Temujin passed. The talents of the youth were so well cultivated by his teacher, Karakhan, that, at the early age of thirteen, he was able to govern the little domain which, as the first born son, he inherited from his father. The heads of the tribes and families under his jurisdiction imagined it would be an easy matter to dispose of the striping of his territory, or to withdrew themselves from his, the Khans, immediately led an army of 30,000 men, in person, against the rebels, and, after one undecisive battle, entirely vanquished them in a second, and rewarded his soldiers with the spoils, of which the prisoners, who were treated as slaves, made a part. Many of these, however, who were distinguished for their rank and influence, were plunged, by the conqueror’s orders, into seventy vessels of boiling water,—a fit prelude to the numberless cruelties by which he was afterwards to spread terror through Asia. A great number of tribes now combined their forces against him. But he found a powerful protector in the great Khan of the Karait Tartars, Oung, who gave him his daughter in marriage. This occasioned a war with a discarded rival. The parties met at the foot of the Altai mountains, and a great battle was on the point of being fought, when the father-in-law, terrified by the thought of his numerous forces suffering the same fate. Gengis observed this definition in time, and immediately intrenched himself between Onon and Tula, whence he could render aid to the Karait troops, who were exposed to the vengeance of the enemy. This noble conduct restored peace between the father and son, but only for a short time. In 1208, they formally declared war against each other, and Oung lost in battle more than 40,000 men, and was killed in his flight. The victor, however, found a new and formidable adversary in Tuyan, the chieftain of the Naiman Tartars. A battle was fought on the banks of the Altai. Tuyan was wounded, and died in the flight, after seeing his soldiers cut down to the last man. This signal victory secured to the conqueror the dominion of a great part of the Mongol territory, and the possession of the capital, Kara-Korum. In the spring of the following year, he held a sort of diet in Bloun Youldouk, the land of his birth, where deputies assembled from all the hordes subject to him. This body conferred on him the crown, and proclaimed him Khakass, or great Khan, in presence of the army. At the same time, a devout Khan, whom he had previously created by himself, promised that he would reign over the whole earth, and commanded him to be called henceforth, not Temud- jyn, but Gengis-Khan. In the same assembly, the emperor promulgated a military and civil code of laws, which is still known in Asia by the name of Yezonkai Khan. This code is grounded on monothelism, though Gengis did not profess any particular religious creed. He did not give the slightest preference to any one over another. All men of merit, whatever their faith might be, were welcome at his court. Gengis also caused many books in various languages, such as the Thibetan, the Persian, and the Arabian, to be translated into the Mongol language, an example which was imitated by his successors, so that the Mongols soon took rank among the refined nations of Asia. The prophecy at the coronation of the great Khan so animated the spirit of his soldiers, that they were easily led on to new wars. The beautiful and extensive country of the Oïrs, in the centre of Tartary, had long excited his desires. This nation, more distinguished for its literary refinement than its martial prowess, was easily subdued, and Gengis-Khan was now master of the greatest part of Tartary. Soon after, however, the Khan had other designs. He broke the miseries of Asia. The conquest of China occupied the Mongols more than three years. The capital, then called Yenking, now Pe-
Lin, was taken by storm, in 1213, and plundered. The conflagration lasted a month. The murder of the ambassadors, whom Gengis-Khan had sent to the king of Khurism, occasioned the invasion of Turkestan, which he undertook with an army of 400,000 men. The first conflict was terrible, but undecided. The sons of Gengis-Khan showed themselves worthy of their father. The Khurisminns lost 169,000 men.

In 1219, the Mongols pushed their conquests still further. The two great cities of Bochara and Samarkand were the greatest centres of learning. They were stormed, plundered, burnt, and more than 200,000 men destroyed with them. We must here lament the destruction of the valuable libraries of Bochara—a city famous through all Asia for its institutions of learning. Seven years in succession was the conqueror busy in the work of destruction, pillage, and subjugation, and extended his dominions to the banks of the Dnieper, where also the grand duke of Kiew and the duke of Tchernikoff were taken prisoners. He had at one time thought of putting to death all the natives of China, turning the cultivated fields into pastures, and making it the residence of a few to do military service. But one of his counsellors, Tetchusny, strongly opposed the measure. The conqueror now resolved to return to his capital, Kara-Korom. Here his family came as far as the banks of the river Tula, to meet him, and received with the liveliest joy. He showed, on this occasion, that he was not desist- tute of feeling. Of his numerous grand-children, he caused two to be educated according to a system of his own. In 1225, though more than sixty years old, he marched in person, at the head of his whole army, against the king of Tangut, who had given shelter to two of his enemies, and had refused to give them up. The Mongols marched through the desert of Cobi, in winter, into the heart of the enemy's country, where they were met by an army of 500,000 men. A great battle was fought on a plain of ice formed by the frozen Karamoran, in which the king of Tangut was totally defeated, with the loss of 200,000 men. The victor remained some time in his newly subdued provinces, from which he also sent two of his sons to complete the conquest of Northern China. Meantime the siege of the capital of Tangut, Nankin, was zealously prosecuted. The city at length yielded, and, like the others, was given up to fire and sword. But the foundation of a Mongol monarchy in China was reserved for his grandson.

On this expedition, Gengis-Khan felt his death approaching. He summoned his children together, enjoined union upon them, and gave them the wisest advice for the government of the extensive states which he left them, and which stretched 1200 leagues in length. He died, surrounded by his friends, in the bosom of victory, August 24, 1227, in the sixty-sixth year of his age, and the fifty-second of his reign. The ambition of this conqueror cost the human race from five to six millions of persons, of every age and sex. Besides this, he destroyed a vast number of monuments of art, and valuable manuscripts, which were deposited in the cities of Balk, Bochara, Samarkan, Pekin, and other places. He was interred, with great pomp, at 'Tangut, not far from the place where he died, under a tree remarkable for the enormous size of its trunk. He selected this spot for his burial place. Before he died, he divided his territories among the four princes whom he had by the first of his four legitimate wives. A great part of the empire of Gengis-Khan, however, came into the hands of Kublai, who is considered as the founder of the Mongol dynasty in China.

GENIUS. The Genii of the Romans were the same as the demons of the Greeks. According to the belief of the Romans (says Wieland), which was common to almost all nations, every person had his own Genii, i. e., a spiritual being, which introduced himself and accompanied him during the course of his life, and again conducted him to the world at the close of his career. The Geni of women were called Junones. Male servants swore by the Genius of their master, female ones by the Juno of their mistress, and the whole Roman empire by the Genius of their states, and of his successors. As the religion of the Greeks and Romans was generally connected with no distinct and settled system, but their whole creed was indefinite, wavering, and arbitrary, so there was nothing determined on this subject, and every one, according to his pleasure, believed either in two Geni, a white and a good one, to whom he was indebted for the memorable events of his life, and a black and evil one, to whom he ascribed all his misfortunes; or in but one, who, as Horace (Epistles, ii, 2), says, was black and white at the same time, and, according to the behaviour of a man, his friend or enemy. From this opinion originated the expression of the Roman "Genius," "to reconcile his Genius," "to treat his Genius well," &c. The stronger, more powerful, prudent, watchful, in short, the more perfect a Genius was, and the greater the friendship which he entertained for the person under his protection and influence, the happier was the condition of that man, and the greater were his advantages over others. Thus, for instance, an Egyptian conjuror put Antony on his guard against his colleague and brother-in-law, Octavius. "Thy Genius," said he, "stands in fear of his. Though great by nature, and courageous, yet, as often as he approaches the Genius of that young man, he shrinks, and becomes small and cowardly." The belief of the ancients in Genii (for not only every man, but every being in nature, had a Genius) was, no doubt, a consequence of their idea of a divine spirit pervading the whole physical world. Whatever gave a thing duration, internal motion, growth, life, sensibility, and soul, was, according to their opinion, a part of that common and universal spirit of nature; therefore Horace calls the Genius the god of human nature. He is not the man himself, but he is what renders every one an individual man. His individuality depends on the life of this man; and, as soon as the latter dies, the Genius is lost among the universal ocean of spirit, from which, at the birth of that man, he emanated, in order to give to that portion of matter, of which the man was to consist, an individual form, and to animate this new form. Horace, therefore, calls him mortalem in unamquodque caput. As the Greeks were accustomed to clothe all invisible things, and all abstract ideas, in beautiful human forms, the Genius of human nature also received a particular image. He was represented as a boy, or rather of an age between boyhood and youth, slightly dressed, in a garment spangled with stars, and wearing a wreath of flowers, or a branch of maple; or naked, and with wings, like the Genius in the villa Borghese, of whose beauty Winckelmann speaks with so much enthusiasm.

The Jinn of the East, commonly translated Genii, seem to be the lineal descendants of the Devalis and Rakshas of the Hindoos. They were never worshipped by the Arabs, nor considered as any thing more than the agents of the Deity. Since the establishment of Mahomedanism, indeed, they have been described as invisible spirits; and their feats and deformities, which figure in romance, are as little believed by the Arians as the tales of Arthur's round table are by ourselves. They are
supposed to be a class of intermediate beings, between angels and men, of a grosser fabric than the former, and more active and powerful than the latter. Some of them are good, others bad; and they are, like men, subject to future salvation or damnation. Their existence as supernatural beings is indeed maintained by the Mussulman doctors, but that has little connexion with their character and functions as delineated by the poets. In poetry, they are described as the children and subjects of Jan ibn Jan, under whom, as their sole monarch, they possessed the world for 2000 years. Till their discredit called down the wrath of the Most High, and the angel Iblis, or Ebilis, was sent to chastise and govern them. After completely routing Jan ibn Jan, Iblis succeeded to his dignity; but, turning rebel himself, he was afterwards dethroned, and condemned to eternal punishment. The Afris and Ghous, hideous spectres, assuming various forms, frequenting ruins, woods, and wild, desolate places, and making men, and other living beings, their prey, are often confounded with the Jinns, or Dvis, of Persian romance, though probably they are of Arabian or Indian origin. We will here advert briefly to which the relation and state have been proposed on the mythological system of Persia and India.

Genius is something in human nature, so mysterious, that it with difficulty admits of a precise definition. It takes its name from the Latin word genius. (See the preceding article.) Genius combines opposite intellectual qualities; the deepest penetration with the liveliest fancy; the greatest quickness with the most indefatigable diligence, and the most resolute perseverance; the boldest enterprise with the soundest discretion. It discovers itself, by affecting, in any department of human action, something extraordinary. To what is old it gives a new form; or it invents the new; and its own productions are altogether original. Hence originality is a necessary consequence of genius; and there is a plenitude in the phrase "original genius." The quality of genius determines beforehand, that the man in whom it is found possesses ability superior to that of others of his race; ability which opens new paths for itself. It is, therefore, a particular modification of the common nature. In a word, genius pertains to individuality, and as this is incommunicable, so that cannot be defined, but must be considered as something innate. We estimate it higher than talent, in the common meaning of the term; and yet, the capacity for originating in extent and energy, is inferior to genius. Where ordinary powers advance by slow degrees, genius soars on rapid wing. But genius does not assume its distinctive character in every exercise of its powers. A gifted poet, for instance, is not, therefore, an ingenious philosopher, nor does the statesman's genius include that of the soldier. We distinguish this genius, therefore, into various kinds, as military, poetical, musical, mathematical genius, &c.; thus, for example, Mozart possessed a genius for music, Goethe for poetry, Raphael for painting, Newton for mathematics, Kant for philosophy, &c. &c. A universal genius, in the true sense of the phrase, is what never has been, and never will be seen, if we suppose this to signify one who can excel in every walk of science and art; for this is inconsistent with the circumstances and conditions requiring the genius of every branch of art. Therefore the phrase is limited to the capacity of excelling in any or every art or science to which a man of genius should devote himself, we must acknowledge, that the happy constitution of mind possessed by such a man, does capacitate him so to excel, the necessary accidents of his existence, and the accidents of his education, and, although celebrated artists have seldom excelled in the walks of science, yet there have been men, who have laboured with equal success in various branches of art and science; thus Michael Angelo was equally celebrated as a statuary, architect, and painter; Leibnitz, as a philosopher, mathematician, and jurist.

Genlis (Stéphanie Felicite Ducrest de St Aubin, marquise de Sillery), countess de. This prolific and popular authoress was born near Autun, in 1746. Mlle. de St Aubin was celebrated for her beauty and musical talents, and favourably received in the most distinguished families, where she had an opportunity to cultivate her mind, and improve her knowledge of the world. Count Genlis, who had never seen her, but had read a letter of hers, was so enraptured with the style in which it was written, that he offered her his hand, notwithstanding her want of fortune. The countess, now became the niece of madame de Montesqui, gained access to the house of Orleans, and, in 1782, was made governess of the duke's children. Her new duties induced her to write the Théâtre d'Education (1779), Adele et Théodore (1782), the Feuilles du Château (1784), and the Annales de la Fierté (1783)—works on education, which were repeated and translated into literatures on the world. She conducted the education of the children entirely herself, taking part, at the same time, in the other affairs of the house of Orleans. It appears, from her writings, that she was favourably disposed towards the revolution; that she had received Péton and Barrère in her house, and had been present in the sessions of the Jacobins. She, however, left France as early as 1791. She relates herself, in her Précis de sa Conduite, that Pétion conducted her to London, that she might meet with no obstructions to her journey. About the time of the September massacres (1792), the duke of Orleans recalled her to Paris. As the governess of the young duchess of Orleans, and the friend and confidant of the father, she had become suspected. She therefore retired, with the princess, to Tourney, where she married her adoptive daughter, the beautiful Pamela, to lord Fitzgerald. Here she saw general Dumasouries, and followed him to St Amand. Not approving of the plan of the general (who had the sons of the duke of Orleans with him), to march to Paris and overthrow the republic, she retired with the princess to Switzerland, in April, 1793, where she lived in a convent at Brengrennat, a few miles from Geneva. The capacity for originating in extent and energy, is inferior to genius. Where ordinary powers advance by slow degrees, genius soars on rapid wing. But genius does not assume its distinctive character in every exercise of its powers. A gifted poet, for instance, is not, therefore, an ingenious philosopher, nor does the statesman's genius include that of the soldier. We distinguish this genius, therefore, into various kinds, as military, poetical, musical, mathematical genius, &c.; thus, for example, Mozart possessed a genius for music, Goethe for poetry, Raphael for painting, Newton for mathematics, Kant for philosophy, &c. &c. A universal genius, in the true sense of the phrase, is what never has been, and never will be seen, if we suppose this to signify one who can excel in every walk of science and art; for this is inconsistent with the circumstances and conditions requiring the genius of every branch of art. Therefore the phrase is limited to the capacity of excelling in any or every art or science to which a man of genius should devote himself, we must acknowledge, that the happy constitution of mind possessed by such a man, does capacitate him so to excel, the necessary accidents of his existence, and the accidents of his education, and, although celebrated artists have seldom excelled in the walks of science, yet there have been men, who have laboured with equal success in various branches of art and science; thus Michael Angelo was equally celebrated as a statuary, architect, and painter; Leibnitz, as a philosopher, mathematician, and jurist.
GENOA; a Sardinian dukedom, and a city on the Med. Sea, which lies in the gulf of Genoa. The city contains 76,000 inhabitants, 15,000 houses, and is about a league in diameter. On the land side, it is surrounded by a double line of fortifications; the outer ones are extended beyond the hills which overlook the city. The spacious harbour is enclosed and made secure by two mole, at the city lies in a semicircular form around it. It was made a free port in 1751. In the small inner harbour, called Darezena, vessels find shelter from every wind. Genoa has been styled the magnificent, the proud, partly because of its fine situation, like an amphitheatre on the sea, with overhanging mountains; and partly on account of the splendid palaces of the wealthy nobility. From the sea, Genoa makes a grand appearance; but, notwithstanding its numerous palaces, one can scarce pronounce it really beautiful; for, in consequence of its confined site, and of its being on a declivity, the streets are mostly narrow, dirty, and so steep, that but few of them can be passed in carriages or pack. Hence, their visits in sedans, if the weather is bad, which are carried behind them when the weather is fine. There are, however, some streets which are broad and regular, particularly that called Balbi, and the elegant new street, in which are many palaces with marble fronts. Among the buildings thus distinguished are the cathedral, the palace of the former doge, the palaces of Balbi and Dorin, and the Jesuit college, rebuilt in 1817. The city has an aqueduct, which supplies it with water from fountains, and fine walks. A considerable trade is carried on in olive oil and fruit. There are also manufactories of silks, of some importance, particularly the black stuffs, velvet, damask, and stockings, which employ about 1500 looms; also of cloth, cotton huse, hats, macaroni, candied fruits, chocolate, white lead, &c. The silk is obtained partly in the province itself, and is also brought from the rest of Italy, especially Calabria, Sicily, the island of Cyprus and Syria. Genoa is now the seat of an archbishop, a semi-conciliar senate, a commercial tribunal, a university, three literary societies, a trading company, established in 1816, St George's bank, and a marine school. The late republic, and present duchy of Genoa, containing 2330 square miles, and 590,500 inhabitants, is bounded on the west by the Alps, north by Savoy, Piedmont, and Lombardy, and south by the sea. It was divided into two parts, the eastern and the western (Riviera di Levante and Riviera di Ponente). In the former lie Genoa and Sestri di Levante; in the latter, Vintimiglia, San Remo, Savona, Finale. Along the north side appear the Apenines, which extend in neighbouring masses, nearly to the coast. The territory is, notwithstanding the mountainous nature of the country, very fertile. The nobility are remarkable for their learning and good morals, the people for their spirit and industry. The original inhabitants of the country were the Ligurians, who were conquered by the Romans, during the interval between the first and second Punic war. After the decline of the Roman empire in the West, they fell into the hands of the Lombards, and with them became subject to the Franks. After the downfall of the empire of Charlemagne, Genoa erected itself into a republic, and, till 1107, was the centre of affairs in Italy. The cities of Lombardy. The situation of the city was favourable to commerce, and it pursued the trade of the Levant, even earlier than Venice. The acquisitions of the Genoese on the continent gave rise, as early as the beginning of the twelfth century, to violent contentions with the enterprising and industrious merchants and tradersmen of Pisa, who became their nearest neighbours, after Genoa had made itself master of the ports of the Apennines, which lie between the Gulf of Montferrat, Monaco, Nizan, Marseilles, almost the whole coast of Provence, and the island of Corsica. The quarrel with the Pisans continued above two hundred years, and peace was not concluded until Genoa had destroyed the harbour of Pisa, and conquered the island of Elba... Not less violent was the contest with Venice, which was formally settled by 1582, by the peace of Turin. As it was the dominion over the western part of the Mediterranean which formed the subject of dispute with Pisa, so, in the war with Venice, it was contended which should possess the eastern portion of that sea. The Genoese made commercial treaties with the different nations of the Levant. Their superiority in trade was at its highest point at the time of the revival of the Greco-Byzantine empire, about the middle of the thirteenth century. Long before had the inactivity of Constantiople allowed the Genoese to obtain a large share in the commerce of the Greco-Byzantine states, which at that time included the towns of the town of Caffa, now Feodosia, in the peninsula of Crimea (see Caffa), they also acquired the control of the Black sea, and obtained the rich commodities of India by the way of the Caspian. If Genoa had adopted a wise colonial system, and had known how to bind her settlements together by a common interest, and to knit them, as it were, to the parent state, she would have held the first rank among the commercial nations at the end of the middle ages. After the conquest of Constantinople, by Mahomet II., in 1453, the Genoese soon suffered for the aid they had imprudently afforded the Turks. Mahomet took from them their settlements on the black sea in 1475. They still, it is true, carried on, for a long time, a lucrative trade with the inhabitants of this region; but at last all access to this branch of trade was denied them by the Turks. Even the commercial intercourse which the Tartars of the Crimean had for a considerable time maintained with Genoa, in their own dominion, was cut off by Turkish jealousy. While the power and commercial rank of Genoa were attaining their height by means of their foreign trade and acquisitions of territory, the city was internally convulsed by civil discord and party spirit. The hostility of the democrats and aristocrats, and the different parties, which were agitated by the continual disorder. In 1339, a chief magistrate, the doge, was elected for life, by the people: but he had not sufficient influence to reconcile the contending parties. A council was appointed to aid him; yet, after all attempts to restore order to the state, there was no internal tranquillity; indeed, the city sometimes submitted to a foreign yoke, in order to get rid of the disastrous anarchy which the conflict of parties produced. In the midst of this confusion, St George's bank (commera di S. Georgio), was founded. It owed its origin to the loans furnished by the wealthy citizens to the state, and was conscientiously supported by the alternately dominant parties. In 1528, the disturbed state regained tranquillity and order, which lasted till the end of the eighteenth century. The form of government established was a strict aristocracy. The doge was elected to be the head of the state. He was required to be fifty years of age, and promised the title of Duke (duca e signor) whenever the senate held their meetings. The doge had the right of proposing all laws in the senate. Without his acquiescence, the senate could pass no decree; and the orders of the government were issued in his name. He con-
issued in office no longer than two years, after which he became a senator and procurator, and, at the expiration of five years, was again eligible to the office of chief secretary. The right of electing the chief secretary was in the hands of the council of state, and the power of dismissing the governor and eight procurators (not counting such as had previously held the office of doge), who likewise retained their office two years. They constituted the privy council, who, with the doge, had charge of all state business. The procurators had charge of the public treasuries and the foreign trade. The foreign trade was possessed, in the first instance, by the great council, composed of 300 members, among whom were all the Genoese nobles, who had reached the age of twenty-two years. Secondly, by the smaller council, consisting of 100 members. Both had a right to deliberate with the governors and procurators upon laws, customs, levies, and taxes; in which cases the majority of votes decided. It belonged to the smaller council to negotiate respecting war and peace, and foreign alliances; and the consent of four-fifths, at least, of the members, was required for the passage of any such measures. Genoa was divided into twenty-two classes—the old and new. To the old belonged, besides the families of Grimaldi, Fieschi, Doria, Spinola, twenty-four others, who stood nearest them in age, wealth, and consequence. The new nobility comprised 437 families. The doge might be taken from among any of them.

By little and little, Genoa lost all her foreign possessions. Corsica, the last of all, revolted in 1750, and was ceded, in 1768, to France. When the neighboring countries submitted to the French in 1797, the neutrality, which the republic had strictly observed, did not save their fluctuating government from ruin. Bourbons gave them a new constitution, formed upon the principles of the French representative system. Two years afterwards, a portion of the Genoese territory fell into the hands of the Austrians; but the fate of Genoa was decided by the battle of Marengo. A provisional government was established, and, in 1802, it received a new constitution, as the Ligurian republic. The doge was assisted by twenty-nine senators, and a council of seventy-two members, as representatives of the people, which met annually, examined the government accounts, and approved the laws proposed to them by the senate. These men belonged to the three colleges, and consisted of 300 landed proprietors, 200 merchants, and 100 men of the literary professions. The republic also acquired some increase of territory, and had, in 1804, a population exceeding 600,000. Its naval force, which was so formidable in the middle ages, now consists only of four to six galleys, and some armed barques. The land force comprises two German regiments of government guards, 3000 national troops, and 2000 militia. The shipping trade was, in June, 1805, when the republic was incorporated with the French empire, but the shadow of its former greatness, and extended no further than to Italy, the south of France, Spain, and Portugal. Before the last wars in Europe, the Genoese supplied a great part of Italy with eastern spices, which were brought to them by the Dutch, with sugar and coffee, partly from Lisbon, and partly from Marseilles, and some armed barques. Ships from Hamburg brought Saxon linen and cloth. The carrying trade of Genoa was of consequence, but the most important branch of its business was its dealings in money and exchange. Many of the European states, Spain particularly, were debtors to the bank of Genoa, and to wealthy individuals in the city. The bank was, in part, for foreign loans, and partly for deposit. It possessed some fine territories, and its income was over ten millions of French livres. The administration of its concern was committed to eight directors, and it had jurisdiction over its own officers. But the more frequently the state sought relief from the bank, in its pressing wants, so much the more did it decline in credit. The republic had pledged various imposts for the payment of the interest upon capital borrowed from the bank, which were continually increased, if they were not sufficient to pay it. At the union of Genoa with the French empire, the bank was abolished, and the rents of 3,400,000 Genoese lire, which they owed to their creditors, were transferred to the account books of France. Upon the overthrow of the French empire, the British became possessed of their city; and the Genoese hoped the more confidently for the re-establishment of their ancient commonwealth, as they had received the assurance of the British commander, Bentinck, in the name of his government, to this effect. But the congress of Vienna, in 1815, assigned Genoa, with its territories, to Sardinia, stipulating that it should have a sort of representative constitution. Genoa had provided for its provincial council, which must be consulted in the business of taxation. The high court at Genoa has equal powers with that at Turin, Nizza, &c.; the university was restored; St George's bank restored, &c. The government is administered by a commission appointed by the people, which is divided into three departments—that of internal affairs, finance, the military and marine.

GENS D'ARMES; the name originally given to the whole body of armed men (gens armata), but, after the introduction of standing armies, to a body of heavy armed cavalry, which composed the chief strength of the forces; and was provided with helmets, cuirasses, pistols, horses protected with armour, &c. After the time of Louis XIV., they had only pistols, helmets, and swords. Part of them were under the immediate orders of the king, part composed the first body of the French cavalry. The latter consisted of men of rank, and belonged to the troops of the royal household. At the revolution, this body was broken up. The name gens d'armes has since been given to a corps, which succeeded the former (marcheauzel), employed in the protection of the streets. It was composed of infantry and cavalry, and was increased, principally to enforce the police regulations. Under Napoleon, it was a distinction to serve in this corps, because only veterans were employed in it; but the members were hated in a high degree, because they had to execute so many odious orders. When the German nations rose against Napoleon, gens d'armes were killed wherever they were found. The Bourbons retained this corps; and they are said to have behaved generally with great moderation; yet the people continued to hate them as the instruments of tyranny. On one occasion, however,—the massacre of the rue St Denis,—they seemed to take revenge for all the insults they had suffered so long. This hastened Villele's downfall. (See France, History of.) August 16, 1830, a royal ordinance abolished the gens d'armes, and established a new body called the municipal guard of Paris, to consist of 1445 men, under the direction of the prefect of police.

GENTIAN, a plant belonging to the natural order gentianae, including about a hundred species, many of them remarkable for the beauty of their flowers, which are usually of different shades of blue, but sometimes red, purple, yellow, or rose-coloured. Most of the species inhabit the northern regions of the globe, or the tops of the highest mountains, particularly of the European Alps. The Andes of South America and Mexico afford fifteen species.
and one has been discovered in New Holland; ten species inhabit the United States of North America. They are herbaceous plants, with simple, sessile, opposite leaves, and terminal or axillary flowers, either solitary or fasciculate, furnished with two styles. Some are fringed, sometimes for neither only; the calyx is of one leaf, and the corolla monopetalous, varying, however, considerably in shape in the different species, either rotate, campanulate, or funnel-shaped, and sometimes plaited or with a fringed margin. The official gentian is the dried root of Gentiana lutea, the European alps, which has a stem about three feet high, broad yellow leaves, and numerous yellow flowers; it has an intensely bitter taste, and is frequently employed as a tonic in diseases of debility; indeed, its ferrebruge virtues have been celebrated from antiquity, and it was in common use in intimate issues before the discovery of cinchona, which it strongly resembles, and for which it may be advantageously substituted. The other species of gentian possess similar properties, in a greater or less degree, which, indeed, extend to the other genera of the same family—G. preferans, subtestiellus, spigilètus, &c. The G. crinita produces one of the most beautiful flowers among the gentians; it is of a beautiful blue, and fringed on the margin; the plant flowers late in the autumn, and is not uncommon in wet places between the forty-eighth and thirty-eighth parallels of latitude.

GENTILES. The Hebrews gave the name of gojim (nations), to all the inhabitants of the earth, except the Israelites. Originally this word had nothing reproachful in its meaning, but, by degrees, the Jews attached such a character to it, on account of the idolatry of all nations, except themselves. The Jewish converts to the gospel continued the name gojim (in Latin, gentes), for those who were neither Jews nor Christians. St. Paul is called the apostle of the Gentiles, because he laboured chiefly to convert or instruct the foreign pagans.

GENTLEMAN. In the modern languages of western Europe, we generally find a word to signify a person distinguished by his standing from the labouring classes, as gentilhomme, gentilhomme, hidago, gentilhomme, &c. The common language most expresses the same idea, is gebildet, which includes not only gentlemanly manners, but also a cultivated mind. The English law-books say, that, under the denomination of gentlemen, are comprised all above yeomen; so that noblemen are truly called gentlemen. And further, that a gentleman, in England, is generally defined to be one, who, without any title, bears a coat of arms, or whose ancestors have been freemen; the coat determines whether he is or is not descended from others of the same name. In Blackstone's table of the rules of precedence in England, we find, after the nobility and certain official dignities, that doctors, esquires, gentlemen, yeomen, tradesmen, artificers, labourers, take rank in the order in which we have named them. But the word corresponding to gentleman, has in no language received so much of a moral signification as in England. The reason of this seems to us to be, that aristocracy has not been so deeply rooted in England, as in France, and that, therefore, the word gentleman, meaning, originally, a man of gentle, that is, noble blood, soon came to signify a man that does what is proper, becoming, and behaves like a person of the higher, viz., well bred classes.

GEOCENTRIC, GEOCENTRIC. In its highest sense a signification a person who not only does what is right and just, but whose conduct is guided by a true principle of honour, that honour which does not consist in observing fashionable punctilios, but springs from that self-respect and intellectual refinement which manifest themselves in easy and free, yet delicate manners. To be truly a gentleman in feeling and manners, is an object of great importance; and many well meaning persons, in the education of the young, forget to awaken early enough the sense of honour and self-respect, which is one of the best guards against all meanness of conduct.

Gentleman, in the United States of America, is a word of a very comprehensive character. The anecdote related of the duke of Saxe-Weimar, during his travels in that country, that a stage-coachman came to his inn, and asked him, "Are you the gentleman that's to drive you," is a good caricature of the wholesale application of the word among them.

GEOFFREY. See Hindoo.

GEOCENTRIC; what relates to the centre of the earth, or is considered as if from the centre of the earth. See Heliocentric.

GEOCYCLIC MACHINE; a machine intended to represent in what manner the changes of the seasons, the increase and decrease of the days, &c., are caused by the inclination of the axis of the earth to the plane of the ecliptic, at an angle of sixty-six and half degrees, and also the remaining parallel, which证 in half all points of its path round the sun, invariably preserves this inclination.

GEOFFREY MONMOUTH (called, also, Geoffrey ap Arthur); an ecclesiastic and historian of the twelfth century. According to Leland, he was educated at Monmouth, in a convent of the Benedictines, whose society he entered. He was afterwards made archdeacon of Monmouth, whence he was raised to the bishopric of St Asaph. The state of affairs in North Wales induced him to retire to the court of Henry II. Geoffrey wrote various works; but his Chronicle, or History of the Britons, is the only production of his pen which requires notice. This Chronicle is now known to be, as the compiler states, chiefly a translation from Armoricans manuscripts. It contains a pretended genealogy of the kings of Britain, from the time of the fabulous Bruce, or Brute, the Trojan. The wonderful stories told of king Arthur also take their rise in this work.

GEORGES RODERER, MADAME, born in 1699, a woman alike distinguished by her qualities of mind and heart, who, during half a century, was the ornament of the most polite and cultivated societies in Paris, was an orphan from the cradle. She was educated by her grandmother, and early acquired a taste for literature and justice. She afterwards became the wife of a man, of whom nothing can be said, excepting that he left her in the possession of a considerable fortune, which she employed partly in assisting the needy, partly in assembling around her a select circle of distinguished persons. Her benevolence was exerted in a touching and delicate manner. An attentive study of mankind, enlightened by reason and justice, had taught Mad. Geoffrin that men are more weak and vain than wicked, that it is necessary to overlook the weakness and bear with the vanity of others, that they, in turn, may bear with ours. Her favourite maxim, in all matters of life, is, "Give and forgive." From her very childhood she was of the most charitable disposition. She wished to perpetuate her benevolence through the hands of her friends. "They will be blessed," said she, "and they, in their turn, will bless my memory." Thus she laid the foundations of the "Monthly Review," with which she was connected, and which was an annual of 1200 livres for her lifetime. "If you should grow rich," she said, "distribute the money out of love to me, when I can use it no longer." In her house the best society in Paris was assembled. Cultivated minds of every description found access to her. None could there
claim a preference: the mistress of the house herself was far from desiring any precedence; she was only amiable and animating. The abbé de St. Pierre, who disdained to converse so much with wits, was a wit herself; she is not so, but she possesses a sound judgment, and a wise moderation is the foundation of her character. She exhibits that pleasing politeness which is gained only by intercourse with society; and no one has a more delicate feeling of propriety. Among the great number of strangers who visited her house in Paris, the most distinguished was count Pontalba, afterwards king of Poland. He appointed her of his accession to the throne with these words: "Madame, votre fils est roi," inviting her, at the same time, to Warsaw. On her journey thither (1768), she was received at Vienna in the most flattering manner, and was invited to a long conversation with the Empress; but the latter, having met Mad. Geoffrin, while taking a ride with her children, immediately stopped, and presented them to her. Upon her arrival at Warsaw, she found a room there, perfectly like the one which she had occupied in Paris. She returned to Paris, after having received the most flattering marks of respect, and died in 1777. Three of her friends, Thomas, Morellet, and d'Alembert, dedicated particular writings to her memory, which, with her treatise, *Sur la Conversation*, have been lately republished.

**See Louis XVI. Age of Geoffroy, Julien Louis; a celebrated French critic, was born at Remes, in 1743. He studied in the schools of the Jesuits, and was left in very straitened circumstances by the suppression of that order. He then became a tutor in the family of a rich individual; and, having frequent opportunities of visiting the theatre, he contrived a taste for the drama, which led him to the study of the dramatic art, to an examination of its principles, of the merit of the different pieces, the genius of the poets, and the talents of the actors. In order to understand more thoroughly the theory of the art, he wrote a tragedy,—*The Death of Caton,—*merely as an exercise. He offered the piece to Caton, who always admired his talents, was pleased with it, and granted him free entrance. This was all he wished; and he never made any attempt to bring the piece on the stage. At a later period, a tragedy, under the same name, was published, and ascribed to him, by some malicious wit, said to have been Caton himself. Geoffroy had hitherto supported himself by giving private instruction; he now endeavoured to become a professor in the university. Having carried off the annual prize for the best Latin discourse, in 1773, and the two succeeding years, it was considered necessary to establish the rule that the same person should not receive the prize more than three times. In the competition for the prize offered by the French academy for the best panegyric on Charles V., La Harpe was the successful candidate, but honourable mention was made of Geoffroy's performance. Geoffroy then entered upon the career in which he gained so much reputation.

The proprietors of the *Année Littéraire* were desirous of finding a man able to fill with honour Féron's place, and to maintain the credit of that celebrated critical journal; and their choice fell upon Geoffroy, who, a short time before, had received the professorship of eloquence in the college of Montauban. After the death of the last of the professors of rhetoric. He accepted the offer, and conducted that journal from 1776 till two years after the breaking out of the revolution. During these fifteen years, he enriched it with profound and interesting articles on philosophy, morals, and literature. His style is clear and concise, and whatever he has written bears testimony to his taste, knowledge of classical literature, and the desire of instructing, rather than of amusing his reader. The revolution, to the principles of which Geoffroy was opposed, put an end to these occupations. In connexion with the abbe Royon, he then undertook another journal—*L'Ami du Roi*; but both journal and editors were soon after proscribed. Geoffroy fled to an obscure village, where he lived in disguise, teaching the children of the peasants, until the year 1799, when he returned to Paris.

In 1800, he undertook the dramatical criticism in the *Journal des Débats*, which afterwards appeared under the name *Journal de l'Empire*, thus catering, under favourable auspices, on a new career, which rendered him truly celebrated. He received for his labours, a salary of 24,000 francs. For a little more than ten years, false doctrines had introduced confusion and disorder into the literary world; Geoffroy was one of those who first restored the taste and principles of classical writers. They insulted and calumniated him. Still he appeared every morning with new expositions and new sarcasms. He did not always remain within the bounds of moderation; his wit was often too severe; his sarcasms in bad taste. He once censured an actress for her manner in a piece in which she had never acted. Upon the whole, however, it must be acknowledged, that Geoffroy knew how to be just, if he intended to be, and that he generally had this intention. He made a great many enemies, for he was obliged to deal with the vanity of dramatic poets and actors; but he had also many friends, who appreciated his judgment, learning, and talents, and admired the fineness of his mind, that, in so narrow a subject, was never at a loss for new resources. Even if we cannot place him among the best of modern writers, we must consider him a learned man, who made great advances in his observations, and the *Journal de l'Empire*, during the time that Geoffroy wrote its *Feuilletons*, had the most extensive circulation of all the French daily papers. Notwithstanding this occupation, he found time for publishing, in 1808, a commentary on Racine, in seven vols. If, in this work, the poetry of that great author is not deeply investigated, it has other merits, for the excellent translations which it contains of several fragments, and even of two entire tragedies of the ancients. He published, also, a translation of Theocritus, in 1801. He died in Paris, Feb. 26, 1814, at the age of seventy-one years. See *Oeuvres de Geoffroy*, 4 vols. 8vo., Paris, 1799.

**GEOGRAPHY (Greek)—description of the earth, of the conditions of our globe in a narrower sense; also, the description of the condition of one of its parts; for instance, the geography of Europe, Russia, Saxony, &c. The earth may be considered as a world, in relation to the other worlds; or as a body of different parts, properties, and phenomena, which, at the same time, is inhabited by beings of different natures; or as the residence of free moral agents, among whom its surface is divided, and through whose influence it undergoes many changes. Geo-**
GEOGRAPHY.

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in the collection of his works, the 10—14 vol., Gottingen, 1824). Funke's Atlas of the Ancient World, 12 maps, with explanatory tables (Weimar, 1800, 4to), is a valuable school book; as is also Heusinger's and Dufour's School Atlas for Ancient Geography, 15 sheets (Brunswick); Reichard's Orbis Terrarum antiquus et modernus (November, 1790, 4to, et seq.) is better, and for schools, Karcher's Orbis Terrarum antiquus et Europae Mediæâ, 23 sheets, Carlshruhe, 1824 (epitomized under the title Atlas Minor, in nine sheets.) A good view of the history of geography, down to the year 1800, is given in Malte-Brun's History of Geography. This work, however, does not supersede the introduction to geography, which ran through many editions; as also by Jäger's geographical writings, and the New European Geography of States and Travels—a work compiled with great diligence, in sixteen vols. (Leipsic, 1790, et seq.). But the first foundation of a scientific system of geography was laid by Ant. Fred. Busching, whose New Description of the Globe appeared first in Hamburg, 1754. The eighth edition of this classical work was published in 1787, and contains, in the whole, eleven vols. From the great changes which geography has undergone since that period, the form of the work has become a little antiquated, and is no longer quite adapted to the present time; it has, also, for a geographical system, too much that belongs to statistics, and the arrangement is, in some parts, incomplete. Of the new revised edition of this work, which has been announced, only the Geography of Portugal by Ebeling, that of Sweden by Rust, and that of America by Anschütz, are available. But Ebeling, of Africa by Hartmann, and the continuation of Asia by Sprengel and Wahl, have as yet appeared. Other geographical works have been undertaken by Normann (Gaspari, Brun, and Cander, but remain unfinished. The compilations of Gatterer—Abriegungen von Geographie, 6 vols., 1793, and Short Introduction to Geography (Gottingen, 1789; new edit. 1879)—display a critical mind. With reference to the latest changes and revolutions in the political world, prof. Stein, in Berlin, wrote his Manual of Geography, according to the latest views, which is calculated for colleges and academies, and appeared in two vols. (Leipsic, 1838), and in the fifth edition (Leipsic, 1825), three vols. (but since the second edition, under the altered title, Manual of Geography and Statistics). The epitome of this work, for the use of elementary schools, appeared, in a fourteenth edition, in 1825. A valuable comprehensive, of which the first edition was published in 1798, has been furnished by Cannabich. The large work, prepared by Gaspari, Hassel, Cannabich, Gutsmuths, and Uckert, which, since 1819, has appeared at Weimar (Complete Manual of the latest Geography), twenty-three vols., combines geography and statistics, is executed with care and intention to supply the place of Busching. No other nation possesses, as yet, a similar work of such extent and completeness. Most of the manuals, as well as compilations, of geography furnish, in their introductions, a survey of mathematical and physical geography. The first outlines of a system of pure geography were drawn by Gatterer, in his Short Summary of Geography. In modern times, the idea has been taken up by Zeune, in his Geo (Berlin, 1808), which, in 1811, appeared in a second edition, with the title Geca, an Essay towards a scientific Geography; by Kaiser, by Stein, by Heusinger, and by Jäger. Jäger's Geography, in its Relation to the Nature and History of Mankind, or General comparative Geography (Berlin, 1817, et seq.), is a valuable work.

As collections for the study of geography, must be mentioned, Neue Allgemeine Geographische Ephemeriden (New General Geographical Ephemerides), 1827, twenty-one vols.; Landcr und Volkerkunde (Description of Countries and Nations, Weimar, in 24 vols., not continued); Bibliothek der neuesten Reisebeschreibungen (Library of the Latest Travels), until 1826, forty-three vols.; Journal des Voyages, Découvertes et Navigations modernes, published by Verreau, in Paris (in 1824 appeared the 60th series); and similar collections; for instance, the Globus, by Streit and Cannabich, and Herzla, by Berghaus and Hoffmann, Stuttgart, since 1825. Hassel's General Geographic-Statistical Dictionary, in two vols. (Weimar, 1817), and Stein's Gazetteet, Post and Mercantile Directory, in four vols. (Weimar, 1817), are among the most valuable of the late works on geography. Among English geographical works, the Edinburgh Gazetteer, or Geographical Dictionary, which appeared in 1817 et seq., in 6 vols. accompanied by an Atlas by Arrowsmith, also Cruttwell's Gazetteer, are distinguished. Besides these, there are geographical works by Pinkerton, Guthrie, Gordon, Salmon, Bell, and many others. Among the French works, the Dictionnaire Géographique Universel, by Beudant Billard, Douau, Dubrèa, Eyries, A. v. Humboldt, &c. (Paris, 1834 et seq.); and Dictionnaire Classique et Universel de Géographie Moderne, with an atlas of ancient, and one of modern geography, by Hyaz Langlois (Paris, since 1826), deserve honourable mention. Van der Meeden's General Atlas for the Physical and Mineralogical Geography of all the Parts of the Earth (Brussels, 1826 et seq.) is valuable. Among the manuals for travelers, the French Voyageurs, by Gen. de la Guiraud, Guide des Voyageurs en France, and Passager auf der Reise in Deutschland, in der Schweitz, zu Paris und Petersburg (Traveller on a Tour through Germany and Switzerland, to Paris and Petersburgh), are the most distinguished, and have run through many editions. For further information, see the article Gazetteer.

GEOLOGY; the science which investigates the successive changes which have taken place in the organic and inorganic kingdoms of nature; inquiries into the causes of these changes, and the influence which they have exerted in modifying the surface and external structure of our planet. Geology and Geognosy mean the same thing—the one word being derived from γη, earth, and γνωσις, to know, and the other from γη and λη φως, a discourse—but with an unnecessary degree of refinement in terms, it has been proposed to call the description of the structure of the earth, Geognosy, and the theoretical speculations as to its formation, geology.

The speculative part of the science engaged the attention of mankind at an early period; for we find that the priests of Egypt maintained the aqueous origin of the globe. Thales, a distinguished Greek philosopher, is said to have taught the Egyptian view of the origin and formation of the earth. Zeno, another learned Greek, maintained that the earth was formed from fire. But it would be vain to attempt an account of the various fanciful speculations
GEOLOGY.

on this subject by ancient writers. We shall only here notice the principal modern theories.

According to the theory of Burnet, the whole materials of which the earth is composed were united together in one fluid chaotic mass. 'When these elements began to separate, the heavier particles formed a nucleus, and the water and the air occupied places according to their specific gravity. A crust formed of matters collected from the air was deposited upon the water, and afforded a station for numerous tribes of vegetables. No seas, or mountains, or inequalities, were seen on the surface of the globe, which was then clothed with the richest verdure, but the power of the sun producing cracks and fissures in the external crust, the surface was broken up and destroyed, and the fragments sinking into the abyss of waters occasioned the universal deluge; the waters again retiring into caverns and fissures, the dry land appeared, and islands and continents were formed as they are now seen.

In an essay towards a natural history of the earth, by W. Playfair, it is supposed that a thin crust was deposited on the earth from the waters of the deluge, and that the materials of which it is composed are arranged according to their specific gravity; the heaviest and hardest bodies forming the nucleus and being covered by those of a finer and lighter quality.

Burnet's theory was, that the planets in general were composed of water, and that the earth, being composed of fluid matter, they assumed a spherical form, and, by the operation of centrifugal and centripetal forces, were retained in their orbits. As the earth cooled, the surrounding vapours were condensed on its surface, and other matters forming their way into fissures and cavities, formed veins and masses of metallic and earthy minerals. But by the motion of the earth, by the action of the sun, winds, and tides, new changes were produced. The waters were greatly elevated above the equator, and brought with them solid fragments from the polar regions. The surface of the globe now exhibited a broken and irregular aspect; land arose in one place and excavations were formed in another.

In Werner's theory it is assumed, that the materials of which the external crust of the earth is composed were either dissolved or suspended in water; and that the first class of rocks were deposited from a state of chemical solution, and thus exhibit a chemical character. In the second series of rocks, a few organized remains are observed, and it is concluded that marine animals were created about the time when these rocks, which are called transitory rocks, were formed. After this period the waters of the earth held in suspension particles of matter in a state of minute division, derived from the disintegration of the first series of rocks, began to subside more rapidly, and to deposit that series of strata which are denominated secondary rocks or floetz rocks, because they are deposited in beds in a horizontal position. By the action of the air and the operation of water, the three classes of rocks being worn down and broken, produced inequalities on the surface of the earth, and the waters still farther subsiding deposited the different kinds of alluvial matters. In this system a fifth class of rocks, including those substances which are ejected by volcanoes, are called volcanic rocks. The formation of vertical strata forms a prominent feature in theory of Werner, as the waters which held in solution or suspension the materials of which the solid parts of the earth are composed subsided, fissures were formed, and the waters holding in solution other earthy and metallic matters, again covered the earth and deposited these matters in the fissures.

Hutton's theory is, that the surface of the globe is in a state of constant destruction and renovation. By the heat of air and water the hardest rocks are subject to decay and decomposition, and the disintegrated materials are conveyed to the ocean, and there accumulating, are formed into horizontal layers. The strata thus deposited are supposed to be consolidated by the heat of central fires; and to the action of the same subterraneous heat, the production of the primitive rocks, which are supposed to have been projected in a state of fusion from the bowels of the earth, is ascribed. To the operation of the same cause, all kinds of basaltic rocks are also supposed to owe their existence; and the materials of metallic veins, and of the vertical strata, have been ejected in a state of fusion from the centre of the earth, and deposited in fissures either previously formed, or which they form for themselves in their progress through the superincumbent strata. In this theory the operation both of fire and water is introduced; the disintegration and decomposition of the solid parts of the globe are produced by water, and, being deposited at the bottom of the ocean, are consolidated and hardened by heat; and a new series of rocks, projected in a state of fusion by the action of the same power, burst through the secondary strata, and elevating it to great heights, constitute a new series of primitive rocks. This system, then, holds out a perpetual revolution on the surface of the earth; and it is assumed and expressed by Dr Hutton himself, in the series of changes which are constantly going on, "there is no symptom of a beginning and no prospect of an end." See Playfair's Illustrations of the Huttonian Theory, Edin. 1802, 8vo.

In order to understand more fully these theories, let us now examine and consider the destroying and the forming effects of water and fire on the surface of the earth.

Destroying and forming effects of water.—Water acts either chemically or mechanically on the surface of the earth. Every long continued rain convinces us of the powerful mechanical effects of water on the surface of the earth. The precipitated water penetrates the surface, then flows along mixed with the matter of the soil, and in its course forms small water-courses, and occasions considerable changes in the flat country and the declivities of mountains. As it rains a very considerable portion of the year, and as every rain carries away a certain quantity of soil, the obvious changes must in this manner be induced on the surface of the globe. Thunder-storms and water-spouts, although more uncommon phenomena, produce more considerable changes, and this either alone, or when their waters join or flow into rivers. These deprive whole districts of their soil to the bare rock; they sometimes even form small ravines, and break down and carry away great masses of rock, that were either formerly much rent, or of such a form as to be easily overpowered by water. If such changes take place in the low land, they must be vastly more considerable in the high land.

The thaw-floods that take place in low countries towards the end of winter and beginning of spring, and in mountainous districts during summer, occasion still greater changes on the surface of the earth. Their effects are truly frightful, particularly when accompanied with rain. The declivities in low countries, over which water flows, are less considerable than in high countries. The theory of Werner, however, extends itself farther in low and flat countries; hence its destroying effects are diminished in intensity. In mountainous countries, on the contrary, the fall is much greater than in flat countries, and the water is compressed into narrow rocky valleys; hence it follows, that rain-floods must be more destructive, the
more considerable the quantity of water, and the more mountainous the country. These floods are still more destructive, when the mountain rocks are of such a nature, as to afford little resistance to the following out of the valleys. On this, indeed, there are exceptions, as in the case in some granites, and other rocks that long resist the effects of the most powerful and violent floods.

The water of these floods, in its progress towards the lower parts of the earth, flows either into ravines, and from these into valleys and beds of rivers; or when it meets with no ravine, scoops out a bed for itself, wherever it meets with a soft yielding rock or a slight hollow. The junction of these mountain-streams with the river of the district not only increases its power by the addition of a considerable quantity of the lower courses of rivers is hasty and deluge the neighbouring country, and thus to occasion great changes on its surface. The different loose materials are carried towards the sea, and are deposited at different distances from the mouth of the river; and these are proportioned to the magnitude of the freshets. The finest of the parts of the sea, the sand, gravel, and larger rolled masses being left on the surface at greater or less distance from the sea, according to the relative magnitude of their parts.

This mechanical action of water appears in many cases to have contributed in an eminent degree to the hollowing out of valleys; but all valleys have not been formed in this manner; for many and very extensive valleys are formed by mountain groups disposed in a circular form, as is the case in Bohemia, Hungary, Transylvania, &c.; others by the original inequalities of the crust of the earth; some by the unequal deposition of formations, and others by the widening of great rents.

It is also observed, that numerous rents and fissures, and the fall of great masses of mountains, take place during floods or wet seasons. These falls are occasioned either by the weight of the masses being increased by increasing the water, or by the diminished cohesion of the parts of the rock affected by the same cause, or by the splitting of great masses by freezing of water, or any other power that interrupts the continuity of the rock, and favours its separation into different masses. The fall of rocks is also occasioned by the softening and removal of subjacent strata or beds by means of water.

These masses sometimes interrupt the course of rivers, and thus form lakes. These lakes in their turn again force a passage through this enclosing barrier, and sometimes so suddenly as to deluge and destroy the low country.

The waters of the ocean also act very powerfully in breaking down the land. Its waves and currents are particularly active in these destroying operations. They either hollow out the rocks on the coast into caves of greater or less magnitude, or, by washing away softer subjacent strata, cause sinkings and falls of great masses of rock. The caves in the islands of Arran and Jura have been partly formed in this manner. In some of the Shetland islands, the sea has formed a passage through large rocks. See a representation in the Plate (41) of the destroying effects of water in three several places in Shetland. A great many fragments which have been drifted by the sea.

If many streams act in different directions on the same coast, or in conjunction with land-floods, as is often the case, the destroying effect is very great. Frequently also the power of the flood is increased by ebb and flood-tide. In this manner, maritime countries have been overwhelmed by the sea.

The Baltic Sea affords examples of these destroying effects; thus the island of Rugen was formerly joined to the Continent, but, by the violent action of the sea, has been much diminished in magnitude, and separated from it. The effects it has produced on the coasts of Christiania, and the Baltic, are well known. The Zuyder-see, which is contained between the provinces of Holland, Utrecht, Gelders, Overysell, and Friesland, was formerly a lake, through which an arm of the Rhine, named the Flevo, flowed towards the ocean. In the thirteenth century the sea broke in, and covered the whole country, and left only detached portions of the land, which now form the islands denominated Texel, Vlieland, Schelling, Newland, and others. This remarkable change is supposed to have been occasioned by a violent landflood, in conjunction with high tides, and a high wind blowing in an opposite direction to the course of the river.

Water in the state of ice, also produces considerable changes on the surface of the earth. Thus we often observe masses from a hundred-weight to many tons floated by rivers during thaw-floods, and these frequently break up the bed of mineral strata, and even carry away immense masses of solid rock. Sea-ice also produces similar effects on coasts, but on a greater scale.

The freezing of water contained in the fissures of rocks also occasions considerable alterations on the surface of the earth. This is observed most particularly in those rocks that have perpendicular fissures, because these allow the water to enter more easily, and favour the separation of the masses when the water expands during the process of freezing. Hence we find no species of rock more changed by the effects of frost than basalt and porphry slate.

The chemical effects of water, particularly the destroying effects, depend on the kind of rock over which it flows; for some allow water to act on them chemically, others do not. Limestone, gypsum, and rock-salt, are more particularly acted on by water than most other rocks.

By this agency, when the height of limestone and gypsum mountains is gradually diminished, caves are excavated in them, and the water of such countries is much impregnated with gypseous and calcarceous matters. The rock-salt which occurs in hills of gypsum, is often dissolved by the water, and thus cavities of considerable magnitude are formed; and by the continued action of the water on the gypsum, the cavities increase in size, until the superincumbent pressure becomes too great, and then the roof falls in and forms those remarkable funnel-shaped hollows so often observed in gypseum countries.

Sometimes, as in felspar rocks, the percolating water washes away the alkaline ingredient; in other cases, the moisture combines with iron, and forms hydrate, or by its decomposition oxidizes the metallic substances in a greater or less degree. By its action on sulphurous compounds, as on pyrites, it gives rise to sulphates or vitriols. As iron is the most general and abundant metallic element, and is easily acted on by air and moisture, it follows that it must be one of the most active agents in the disintegration of mineral substances.

We shall now consider the forming effects of water, which are either mechanical or chemical.

It is evident, that by mechanical destruction will be followed by a mechanical formation; for the masses which are separated by the water will be again depo-
stilled on the surface of the land, in lakes, rivers, on coasts, or on the bottom of the sea. During land floods the waters disperse in its mechanically mixed parts to rivers; on the contrary it often deposits them in hollow places. Those particles that reach rivers, form sand-banks, particularly in slow-flowing rivers. Very extensive mechanical formations are daily taking place on the coasts, and even in some places at a considerable distance from them, by the waters of the ocean. In the Baltic or East sea, many appearances of this kind are to be observed. Thus the bay of Fulbaka, which was navigated with boats within the memory of man, is now filled up and covered with grass. Several harbours in Lapland that formerly admitted vessels, are now three or four thousand places from the sea; and at Helsingor there are iron works in places which were covered by the sea about eighty years ago. The whole of the ancient kingdom of Prussia appears to have been formed in this manner; it is said that the sea reached as far as Culs within the period of human history.

The city of Daniz, several hundred years ago, was close on the sea-shore.

Similar appearances occur on other coasts. Between the coasts of Norfolk and Zealand in Holland, there is a great sand-bank where opposite currents meet, and it is probable that this bank will in time form an island, and probably even an isthmus. Much of the United Provinces has been produced by the forming action of the sea.

A great portion of the flat country from the mouth of the Rhone to the Pyrenees, is said to be the work of the ocean; and the whole tract of country from Fisa to Leghorn, is a formation of the same nature.

In those parts of the sea where its waters are but little agitated, similar forming effects are to be observed.

Where marine currents flow rapidly, and near the coast, they exert a destroying power, but when they act at a distance, a forming power.

The effects produced by the sea alone, without the aid of rivers, are far less beneficial. When the sea-coast is low, and the bottom consists of sand, the waves push this sand towards the shore, where, at every reflux of the tide, it becomes partially dried; and the winds, which almost always blow from the sea, drift up some portion of it upon the beach. By this process many ranges of sand-hills are formed along the coast. These, if not fixed by the growth of suitable plants, either sown by nature, or planted by human industry, would be gradually, but certainly carried towards the interior, covering up the fertile plains with their sterile particles, and rendering them unfit for the habitation of mankind, because the same winds which carried the loose dry sand from the shore to form the downs, would necessarily continue to drift that which is at the summit further towards the land. On the east coast of Scotland, and in many of the islands, there are striking effects of this kind. The sands of the Lybian desert have left no lands capable of tillage on any part of the western banks of the Nile not sheltered by mountains. Summits of the ruins of ancient cities buried by these sands still appear externally.

Sea-salt affords us examples of the chemical forming effect of water, as is exemplified in the lakes of the Tauride, in Southern Africa, and many other places, there where the banks of self-formed sand-banks are raised by precipitation from the waters of the lakes; and sometimes these beds alternate with others of clay and loam, and vary much in their degree of inclination. Bog iron-ore, which is forming daily, is another example of the same kind of formation. Monas-ore sometimes alternates in beds with peat; and swamp-

ore sometimes occurs in thin beds, covering the more compact kinds of peat. Peat itself may be ranked as one of the substances formed by chemical agency.

The vast accumulations of calc-sinter found in limestone caves, as in those of Derbyshire, the Hartz, the Fichtelgebirge, Antiparos, Gibraltar, &c., belong also to the chemical formations. Calc-sinter is found usually in enclosed spaces, whereas calc-tuff is formed in open spaces. This substance is deposited sometimes in caves, and frequently in fissures, forming veins, which are in this manner filled with very compact calc-sinter, and sometimes even with crystallized calc-spar. Calc-tuff is formed by calcareous brooks emptying themselves into hollows, and thus affording an opportunity for the deposition of their calcareous contents. Near Cantstadt in Wirtemberg, streams of this kind incurst every thing in their vicinity with calc-tuff, which approaches more or less to calc-sinter. If such streams flow into situations where the water has repose and time to deposit its calcareous contents, calcareous beds or strata are formed, which are more or less porous. This porosity has been increased after some shocks of an earthquake, it forms for itself an opening. Stones and ashes are thrown to a great distance, and lava is vomited forth. The more fluid part of the lava runs in long streams, while the less fluid portion stops at the edge of the opening, raises it all round, and forms a line terminated by a crater.

Thus volcanoes accumulate substances on the surface that were formerly buried deep in the bowels of the earth, after having changed or modified their nature or appearances, and raise them into mountains. By these means, they have formerly covered some parts of the continents, and have suddenly produced mountains in the middle of the sea.

The changes which earthquakes produce on the earth's surface form an important consideration in geology. Werner distinguishes two kinds of earthquakes. Some, he says, appear to be connected with the very existence of the earth, and are productive of immense changes, far beyond the power of the most powerful human industry. Others, which appear to have their focus at a much greater depth, and whose effects are much greater, are propagated to immense distances with incredible celerity, and are felt almost at the same time at points thousands of miles distant from each other. Some of the latter, however, approach the former, and are still connected with volcanic phenomena. Thus, during the earthquake which overthrew Lima in the year 1746, and which was one of the most terrible that has been recorded, four volcanoes opened in one night, and the agitation of the earth ceased.

If in the more violent we include the slighter agitations of the earth's surface in particular places, earthquakes may be said to be universal or general, and we may affirm that no considerable country is entirely exempt from them. Sandy deserts and fertile regions, primitive, secondary, and tertiary hills, extensive plains, and even marshy districts but little elevated above the level of the sea, afford no protection against these destructive phenomena, which are equally prevalent in cold, in temperate, and in tropical climates. They are, however, gen-

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rally considered more frequent near to consists; thus, Syria, the coasts and islands of Asia, America, the European coasts of the Mediterranean, and Iceland, are almost continually at it; while the plains of Africa, Asia, and the North of Europe are least exposed.

Viewing the whole earth, and including every slighter agitation, earthquakes appear to be exceedingly numerous, and it may be maintained that not a week passes in which the earth's surface, in some place or other, is not shaken or less agitated. The great number of concussions observed in civilized countries, and the fact that some districts are constantly agitated by them, entitles us to draw the conclusion. Their return in the places most subject to them, and in the places where they are least frequent, is not regulated by any precise period of time. Their appearance is not connected with any particular season of the year or state of the atmosphere, and they take place by day as well as by night.

The phenomena peculiar to earthquakes are in themselves sufficiently simple. They consist in tremblings and oscillations of the earth's surface, called shocks; extending over greater or smaller tracts of country, and frequently following a particular direction. The shocks appear at first chiefly as perpendicular heaving; then as horizontal undulations or oscillations; lastly, in some instances, there is a violent agitation: the motion is more or less abrupt from the earth's surface, slipping, rising, and sinking of the ground, the violent agitations of the sea, lakes, rivers, and springs; consisting, in springs, in their drying up or bursting forth with great violence; in lakes, rivers, and the ocean, in their falling and rising, and rushing back and forwards, owing to the sinking and rising of the earth, we obtain an emanation of the principal phenomena.

The slighter shocks of an earthquake, consisting of perpendicular heaving and horizontal undulations, commonly produce rents in houses, moving light objects in them, as articles of furniture. Persons unacquainted with the phenomenon, or who do not perceive it from the subterraneous noise resembling thunder which accompanies it, feel unsteady while in their beds, but particularly when sitting, and believe themselves seized with a sudden giddiness. The shocks proceed gradually to be more violent, and more frequent as they are more frequently felt. In the less experienced. Then the most substantial buildings are shattered to pieces, and the inhabitants buried beneath their ruins; while buildings of a lighter construction are only rent, and very slender reed huts are least of all exposed to destruction. In some cases the fracturing, or as it were, trituration, surpasses description. Hence, for the plainest reasons, it is most dangerous to remain in houses or inhabited places; but even the fields and mountains themselves afford no perfect security, insomuch as the fields frequently in some places open into fissures, and are rent asunder; while mountains are not only rent, but slide down into the valleys, dam up rivers, form lakes, and cause inundations. Although the desolation produced by these convulsions exceeds all description, this is much more the case with the rotary motions; a species of motion, however, the existence of which has been denied by some geologists. In proof of this I have mentioned that during the earthquake of Catania, whose general direction was from S. E. to N. W., many statues were turned round, and a large mass of rock was turned 25° from south to east. But the rotary motion was more strikingly exemplified in the earthquake at Valparaiso, in Chile. In the first week, many houses were turned round, and three plain trees were found twisted round one another like willows. These rotary motions of masses of rock are particularly interesting when viewed in connexion with the sliding and shifting among strata in non-volcanic districts. In the earthquake at Calabria, two obelisks placed at the extremities of a magnificent façade in the convent of S. Bruno, in a small town called Stefano del Bosco, were observed to have undergone a movement of a singular kind. The shock which agitated the building was described as having been longitudinal, but vertical. The pedestal of each obelisk remained in its original place; but the separate stones above were turned partially round, and removed in some instances nine inches from their position without falling. See Plate 41, figure 1, for a representation of this.

It is the agitation of the sea that points out the great extent of the tracts of land convulsed by earthquakes. In this respect, the earthquake at Lisbon, in 1755, was the most remarkable and most violent that ever visited Europe. In consequence of it, by the concussion on the bottom, or momentary rising or upheaving of the sub-marine land, the sea overflowed the coasts of Sweden, England, and Spain, also the coasts of Antigua, Barbadoes, and Martinique in America. In Barbadoes the tide, which rises only twenty-eight inches, rose twenty feet in the bay of Carlisle, and the water appeared as black as ink, owing probably to bituminous matter thrown up from the ocean bed. In November, when the concussion was most violent, the water at Guadaloupe retreated twice, and on its return rose in the channel of the island to the height of from ten to twelve feet. Similar appearances were witnessed at Martinique. A wave of the sea, sixty feet high, overflowed a part of the city of the capital, and the lakes of Switzerland, such as Geneva, were observed to be in commotion six hours after the first shock. It is also remarkable that agitations were noticed in lake Ontario, in October, 1755. During the earthquake at Lima, 1858, a wave of the sea rose eighty-four feet high in the harbour of Callao. During the earthquakes in Calabria in 1755, the sea not only overflowed the coast and drowned many people, but was in general so much agitated that the guns on ship-board sprang from the deck to a height of several inches.

Besides the common operations of earthquakes already mentioned, there is another that do not immediately succeed the concussions, and therefore happen less frequently. To these belong the sliding down of parts of mountains, as at Dobratch in 1345, and the falling together of two mountains in Jamaica in 1692, by which the bed of a river was dammed up. In the latter place, a part of a mountain slid down and covered many plantations; the city of Port Royal sunk to the depth of eight fathoms; and a plain of 1000 acres fell in, with all buildings upon it.

The magnitude of rents formed by earthquakes vary from a few feet to many fathoms in extent. They have either a direction which is nearly straight or more or less winding, or turn in all directions from a centre. During the terrible Calabrian earthquakes of 1783, rents were formed of great dimensions. At Jerocarne the country was lacerated in a most extraordinary manner, the fissures running in every direction like cracks on a broken pane of glass. (See Plate 42, figure 2.) In the same year, it is mentioned, that during the earthquake of Catania, whose general direction was from S. E. to N. W., many statues were turned round, and a large mass of rock was turned 25° from south to east. But the rotary motion was more strikingly exemplified in the earthquake at Valparaiso, in Chile. In the first week, many houses were turned round, and three plain trees were found twisted round one another

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was, before the earthquake, fordable at Luckput, being only a foot deep when the tide was at ebb, and at flood tide never more than six feet; but it was then deepened, and, after the earthquake, to more than eighteen feet at low water, showing that a considerable depression had taken place. The channel of the river Rum was so much sunk that, instead of being dry as before, during that period of the year, it was no longer fordable except at one place; and it is remarked by Captain Macmurdo—"and the observation of it had geological importance, as connected with the formation of valleys, of river districts, &c.—"should the water continue throughout the year, we may perhaps see an inland navigation along the northern shore of Cutch; which, from stone anchors, &c., still to be seen, and the tradition of the country, I believe to have existed at some former period." Sindree, a small mud fort and village belonging to the Cutch government, situated where the Rumi joins the Indus, was overflowed at the time of the shock. The people escaped with difficulty, and the tops of the houses and walls are now alone seen above water. In the year 1798, in the Caracca, during a great earthquake, estimated to be fifteen miles long and six miles broad, was swallowed up. During the earthquake at Lisbon in 1755, a new quay entirely disappeared; thousands of the inhabitants had taken shelter on it, to be out of the reach of the tottering and falling buildings. When suddenly the quay sunk down with its thou-
sands of boulders, and not one of their dead bodies ever floated to the surface. In the year 1802, during an earthquake in Jamaica, a tract of land about a thousand acres in extent sunk down in less than a minute, and the sea immediately took its place. On the north side of the island several large tracts were washed away, their thousand and two hundred miles from north to south. When the country around Valparaiso was examined on the morning after the shock, it was found that the entire line of coast, for the distance of more than a hundred miles, was raised above its former level. The area over which this upheaval was estimated to be one hundred thousand square miles: the rise upon the coast was from two to four feet; at the distance of a mile inland, it was estimated from five to seven feet. On the 18th of March in the year 1790, at St Maria di Niscoi, some miles from Terranuova, near the south coast of Sicily, a loud subterranean noise was heard under the town just mentioned, and the day after earthquakes were felt; then the ground gradually sunk down for a circumference of three Italian miles, during seven shocks, and in one place to a depth of thirty feet; as the subsidence was unequal, rents were formed, some of which were so wide that they could not be leaped over: this gradual sinking continued to the end of the month. About the middle of this period an opening took place in the subsiding land, about three feet in diameter; through which continued to flow, for three hours, a stream of mud, which covered a space sixty feet long and thirty feet broad; the mud was watery and composed of chalky mud, and some of the same clay, with fragments of loose limestone; it smell of sulphur and petroleum. On the 16th June, 1819, at Cutch in Bombay, a violent earthquake took place, during which, independent of other changes, the eastern and almost abandoned channel of the Indus was much altered: this estuary
species from the mass enclosing them. These rocks are called *amalgamated*. Many rocks contain accidental substances, both in the regular condition of parts, or various, and pass into each other at gradual or irregular changes, or there is a change in some of their constituent parts. They also undergo various decompositions from the action of water, air, &c.

**Stratification and Divisions of Rocks.** In stratification, we find large masses, and even mountains of rocks, divided, by parallel clefs, or splits, into large and often very extensive parallel masses or strata. These strata differ, in being more or less distinct, regular or irregular, straight or undulating. They are seldom found to be perfectly horizontal. Some species of rocks are thrown off, having their sides interrupted, covered by strata of various kinds, which strata are called *druses*. The substance of the vein is sometimes firmly united with the rock adjoining it, and is sometimes separated by clay, earth, &c. The relative position of several beds and veins of mineral substances, in any mountain or country, is of great importance in mining. It is seldom that perfect regularity exists among the various mineral deposits in any vicinitv; they more commonly vary in their direction, and thus cross and intersect each other. Very extensive deposits of minerals, of limited length, are termed *standing beds*, or *masses*; these are of very great numbers of small veins and deposits, are called *foors*. Beds and layers of minerals are particular masses, of a flat or tabular structure, running in the same direction with the strata, but differing from the rocks in which they are contained, in composition and structure, as well as in other circumstances. Foreign deposits, of various kinds, occur in mountains, and in rocky districts of all sorts. Their direction and dip are generally the same with those of the mountain masses containing them. *Mineral deposits* consist either of simple minerals, unmixed, or of rocks. Many deposits contain both. (For an account of petrifications, see Organic Remains.)

The substances of which the subjects of these remarkable changes consist, are chiefly calcareous, less frequently siliceous, or combustible minerals; also ores. The presence of petrifications, especially in rocks of new or later formation, is a circumstance of great importance in a geological point of view; since, by a careful consideration of them, it has been ascertained, that successive generations or creations of animal species, such as are not now living any where, are found buried in rocks, in such order that similar or related species are found in rocks and situations of another age, or of the same age, the species being more or less, according to the antiquity of the rock formations in which they occur. And in this manner a ground is afforded for solid conclusions in regard to the antiquity, or period of formation, of many kinds of rocks. See Plate 40 for a geological map of Europe.

**Divisions of Time in the Formation of Mountains, and the Classification of Rocks.** The circumstances of the relative position of rocks, enable us to form some comparisons between them, in regard to their antiquity, although we are unable to state the express period of their respective formations. They are divided, in this respect, into *primary*, *transitional*, *secondary*, or *floes* rocks, *alluvial and volcanie rocks*; or, according to a more recent division, into *primary* or *primitive*, *secondary*, *tertiary*, *volcanic*, *alluvial*, and *alluvial deposits*—comprehending all rocks and the mineral masses, intersected by veins which fill the former, and whose sides or borders are of different structure, and are remarkable for the great power which they have in adhering to the component parts. Siliceous and argillaceous earths form the chief ingredients in their composition, and they are remarkable for the absence of all petrifications to testify the previous existence of organic beings. When both classes occur to-
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together, they always lie under the secondary rocks, and are hence supposed to have been formed before them. But although, in their relative situation, the primary rocks are always lowest, yet, when secondary rocks are absent, this relation does not appear upon the surface of the earth, and do, in fact, constitute the summits of the greater part of the highest mountains. When primary rocks are stratified, the strata are seldom horizontal; on the contrary, they are often highly inclined, and sometimes nearly or quite perpendicular. Whether these strata were originally inclined, or whether, subsequently to their formation, they were changed from a horizontal to an inclined position, by the action of some powerful cause, is a question on which the most distinguished geologists are divided in opinion. The transition rocks bear, also, some resemblance to the primitive; but there is less distinctness of their component parts, and among them we meet the first occurrence of organic remains of animals previously existing. In the secondary or newest formations of rocks, we find many and various remains of a former race of inhabitants of the world. We can trace mechanical operations on the surface of the earth; and also the fragments of older rocks in the compound structures met with among them. They are earthy, and not crystalline, in their structure, and the calcareous earth predominates in their composition. Though sometimes found on the summits of primitive mountains, they are usually placed on the declivities of these mountains, or at their feet, or under the intervening valleys or plains. Deposits of stones, gravel, sand, chy, earth, &c., are called ditwial, when they are so extensive as to cover large portions of the earth, and as to be evidently the results of floods of water, rolling over the whole extent of the earth; ditwil, when they are limited in extent, and may be ascribed to the operation of causes now in action, as the sea, rivers, rains, &c. The classification of rocks is either mineralogical or geological. The former, resting upon the actual composition of rocks, must, of course, take a form and order of arrangement quite different from the latter, in which their relative position and inferred comparative ages form the basis of the system. In the arrangements founded upon elementary composition, or other mineralogical points of similarity, rocks are often found, in near relation and approximation, which belong to periods of formation far remote from each other. The most marked instances of recent rocks often present striking similarities, in composition and other respects, from which their relative ages could not by any means be inferred. In opposition or contradiction to this, may be regarded the geognostic or geological arrangement of rocks, which attempts to follow the order in which they are supposed to have been formed. The following is a brief statement of the general grounds of geological opinions and systems. All writers upon this subject agree in this: that there are evident marks of at least three distinct revolutions or changes, which have been co-extensive with the surface of the earth, and which occasion rocks are absent. The primitive one appears at present form; by which the order of things was wholly changed, and all creatures living at such period entirely destroyed; and which have been followed, in each case, by a new organization of things, partially, but not wholly, similar to the preceding. Various circumstances, however, also, to a greater or less extent, are means, that man was not a witness of any of these changes, but that it was after the last of them that he was numbered among the inhabitants of the earth;—and it follows of course, from this, that the flood, of which traditions exist in all countries, is not one of those alluded to. As each race of organized beings was successively overwhelmed by that destructive commotion, which was to terminate in the formation of a new covering for the earth, various remains were left, and are still to be recognised, which indicate the form and place of the event; and geologists show them, with few exceptions, to have been very different from the races at present in existence. These remains give us distinct accounts of the beings that inhabited this earth, as we now do; but, they, unfortunately, give us no distinct account of the events which occasioned the destruction of the first, and thus refer to the inhabitants of the earth, to be in some respect relative to them. In this respect, they resemble the gigantic architectural and other artificial remains, which are found in Asia and America, and which date from a period, and belong to a race, of which we have no other tidings,—the impossibility of attaining which, only renders their inspection the more interesting. The races of beings which were last destroyed, lie in the upper strata of the earth, while their predecessors are buried far beneath; but each present characteristics sufficient to mark and identify them. The first, or those which are now found at the lowest points in the earth, differ entirely from those which were formed during the middle and upper ages, which were then established among the occupants of the earth, were quite different from those now existing. Writers are, also, agreed in this: that, previously to the existence of those races, of whose remains we were just speaking, and which, in point of perfection, were so inferior to the present races of animals, this planet was waste and void, and that it existed in a fluid form, at least those parts now constituting the primitive rocks, and that they became solid by crystallization. The spheroidal form of the earth, which is fastened at the poles, and the phenomena presented by the internal structure of many mountains, afford strong grounds for the belief, that the mass of which they were formed, was in motion when it began to become solid, and that it became so before its parts could entirely assume a new order of arrangement. See Breislak's work upon geology. One of the most valuable works upon this subject is that of Humboldt upon the relative position of rocks in the two hemispheres. We may also refer to the Transactions of the Geological Society of London, commenced in 1807, and Leonard's Characteristics of Rocks, published at Heidelberg, 1823. See, also, Cuvier's Theory of the Earth, with notes by R. Jameson, Edinburgh, 1817; Lyell's Principles of Geology, 4 vols. London, 1839; Breislak, Granville Penn's Geography; De la Beche's Geological Manual, 3d edit., London, 1833, 8vo; Buckland's Reliquae Diluviane, 2 vols. 4to, London, 1824, 1825.

GEOMANCY is called, by Cotgrave, divination made by points and circles in the earth. Sparril, in his translation of Cattan's Geomancie (written about the middle of the sixteenth century, and translated in 1591), says:—"Geomancie is a science and art, which consisteth of points, prickes, and lines made instead of the foure elements, and of the staries and planets of heaven, called the science of the earth, because in times past it was made on it, as we will shew hereafter, declaiming its present form, a starr, and every line an element, and every fouro the quarters of the world, that is to say, the East, West, South, and North. Wherefore it is easy to know, that geomancie is none other thing but astrologie, and a third, which is to say, participating thereto in those two, which is astrologie; geomancie is called of gy, a Greeke worde which signifieth earth, and manoscit, which is to say, knowledge. Or, defining it more properly, it is derived of ggos and magos, which signifieth knowledge of earthly things by the power of the superior bodies of the four elements, the seven planets, and of the twelve signs of heauen.
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And this art may be made on the earth or on white paper, or upon any other thing whereon it may com­modiously be done, so that the pricks and lines may be known. The beginning and method of this art came from the Indians, which found it before the world was drowned. It may be practised whensoever that a man will, according to the demand that is made, be it night or day, fair weather or foul, rain or shine. One of the oldest writers on geom­etry is said to be Theophrastus, who wrote a tract, besides some notices in his work De occulta Philoso­phia, has left an express tract, De Geomantia, of which he speaks with much honesty in a production of his latter years, De Vaniitate Scientiarum:—"I have written also a certain book of geomancy, far differ­ing from the other, but no lesse supersticious, false, or, if you lyst, I will say, lying." (Sandford's transla­tion, 1675.) In a subsequent chapter (36), he dis­tinguishes two sorts of geomancy:—"All they which write hereof do affirm, that geomancy is the daugh­ter of astrology, whereof we have spoken in arith­metic. This, which fashioneth certain figures attributed to the heavenly signs by which they divine. There is also another kind of geomancy which Almadul the Arabian introduced and brought in, the which doth divine by certain conjectures taken of similitudes of the cracking of the earth, of the moving, cleaving, swelling, either of itself, or els of inundation and breaking, or of the dust, or of the wheele, the which also is grounded upon vaine superstition of astrology, as that which observeth houses, the newe moomes, the rising and forme of the starses." This science was flourishing in the days of Chaucer, and was deeply cultivated by Dryden, at the time of his rifaccimenti of the Knight's Tale. Cutan, whose book we have already mentioned, appears to have been very largely employed. Among other figures, he presents us with one cast for the lord of Ferti, when he was in love with my lady Bye; one for the lord of Lymoges, to know whether a musician, who had absconded from his service, would return; one for my lord Clermont of Lodeves, respecting his litigated inheritance; some relative to the sale and purchase of horses; one to determine whether the cardinal Trivulce (Trivulzio) should succeed in making peace between the king of France and the emperor; one to determine the day on which the emperor should quit Nice; another to ascertain whether a person, dead or alive; a figure to find the question for which another figure, found by accident, was made; others to dis­cover people's thoughts, or to find out their names. It may be gratifying to our readers to know, that this science is "no arte of inchaunting, as some may suppose it to be, or of divination which is made by diabolike invocation; but it is a part of natural magie, called of many worthy men the daughter of astronomy, and the abbreviation thereof." There is a tract on geomancy by Bartolomeo Cocol, who styles himself Filosofo integritudo (Venice, 1550). Out of school, which appeared in 1600, appear to have been one of the latest serious cultivators of geomancy.

GEOMETRY (from the Greek, signifying the art of measuring land); the branch of pure mathematics which treats of the magnitudes of dimensions. It is divided into longimetry, occupied exclusively with lines, plane, or geometrical, occupied with planes or surfaces, and areometry, treating of solid bodies, their con­tents, &c., and the doctrine of the functions of the circle, and its application to certain figures, formed by lines, from which originate (a) trigonometry, (b) tetragonometry, (c) polygonometry, (d) cyclometry, which teach the find, from the dimensions of certain parts of a figure, those of certain other parts, by which particularly altitudes and depths are to be measured. Geometry is divided into elementary and applied. The former, or theoretical geometry, treats of the different properties and relations of the magnitudes of dimension in theorems and demonstrations, which the latter applies to the various purposes of life in problems and solutions. Geometry is taught in different ways; as, for instance, by diagrams, which is called constructive geometry, or by the application of algebra to dimension, which is called analyti­cal geometry. The invention of this important science is ascribed by some to the Chaldeans and Babylon­ians; by others to the Egyptians, who were obliged to determine the boundaries of their fields, after the inundation of the Nile, by geometrical measurements. According to Cassiodorus, the Egyptians either derived the art from the Babylonians, or invented it after it was known to them. Thales, a Phormician, who died 548 B. C., and Pythagoras of Samos, who flourished about 520 B. C., introduced it from Egypt into Greece. The discovery of five regular geometrical bodies, the cube, tetraedron, octaedron, icosaedron and dodecaedron, is ascribed to the latter. He dis­tinguished himself particularly by the invention of the theorem, which is called from him the Pythagor­ean, and, on account of his important improvements, has received the name of magister matheseos.

In elementary geometry, Euclid of Alexandria is parti­cularly distinguished. About a hundred years after him, Archimedes extended the limits of geometry by his measure of the sphere and the circle. Aristotle, and, at a later period, Apollonius of Perga (who flourished 260—230 B. C.), did much for the higher geometry. In Italy, where the sciences first revived, after the dark ages, several mathematicians were distinguished in the sixteenth century; the French, and, particularly, the Germans, followed. Justus Byrge laid the foundation of logarithms, and, accord­ing to some, was the inventor of the proportional circle; others ascribe the invention to Galileo. Reinerus Gemma Frisius, who died in 1555, invented the in­strument used in surveying, called the plain table. Simon Stevin of Bruges applied the decimal measure to geometry. In 1635, Bonavent. Caralliener opened the path to the higher geometry of infinites; and, in 1681, Leibnitz advanced the science by the invention of the differential calculus, and Newton by the theory of the fluxions. Robert Hook, who died in 1703, was the first who considered the influence of the re­fraction of light in measuring heights. Ludolph of Ceuin, or Cologne, who died at Leyden in 1610, dis­covered the proportion between the diameter and the circumference of the circle. In recent times, the French have been most distinguished in geometry, and have produced the best elementary works for schools in this branch; as, for instance, those of Legendre and Mongè. The Germans have a num­ber of elementary works on geometry, some of which are excellent. Among the most approved modern works on the elements of geometry, are those of Euclid, as translated by Simson, Ingram, and Play­fair, and the treatises of professor Leslie, and M. Legende, above mentioned.

Definitions. A point is that which has position, but no magnitude nor dimensions; neither length, breadth, nor thickness. A line, fig. 1, is length, without breadth or thickness. A surface or super­ficies, fig. 2, is an extension or a figure of two dimensions, length and breadth; but without thick­
ness. A body or solid, fig. 3, is a figure of three dimensions, namely, length, breadth, and depth, or thickness. A right line, or right line, lies all in the same direction, between its extremities; and the shortest distance between two points. When a line is mentioned simply, it means a right line.

A curve, fig. 4, continually changes its direction between its extreme points. Parallel lines, fig. 5, are always at the same perpendicular distance; and they never meet, though ever so far produced. Oblique lines, fig. 6, change their distance, and would meet, if produced on the side of the least distance. And an angle is the inclination or opening of two lines, AB and AC, having different directions and meeting in a point A. In designating an angle, the letter at the point of meeting, is placed in the middle; thus, we say, angle BAC or CBA, but not A B C or A C B; fig. 7.

A right angle, B A C or B A D, fig. 7, is that which is made by one line A B perpendicular to another C D. Or when the angles on each side are equal to one another, they are right angles. An oblique angle is that which is made by two oblique lines; and is either less or greater than a right angle. An acute angle, A B C, fig. 8, is less than a right angle. An obtuse angle, A B C, fig. 9, is greater than a right angle. Superficies or surfaces are plane, when they are either plane or curved. A plane superficies, or a plane, is that with which a right line may, every way, coincide. Or, if the line touch the plane in two points, it will touch it in every point. But, if not, it is curved. Plane figures are bounded either by right lines or curves. Plane figures that are bounded by right lines have names according to the number of their sides, or of their angles; for they have as many sides as angles; the least number being three.

A figure ABC, fig. 10, of three sides and angles is called a triangle. An equilateral triangle is that whose three sides are all equal. An isosceles triangle, fig. 10, is that which has two sides equal. A scalene triangle is that whose three sides are all unequal. A right-angled triangle, fig. 11, is that which has one right angle, A B C. In a right-angled triangle, the side A C opposite to the right angle, is called the hypotenuse, and the other two sides are called the legs, or sometimes the base C B, and perpendicular B A. Other triangles are oblique-angled, and are either obtuse or acute. An obtuse-angled triangle, fig. 12, has one obtuse angle. An acute-angled triangle, fig. 13, has all its three angles acute. A figure of four sides and angles is called a quadrangle, or quadrilateral. A parallelogram, fig. 14, is a quadrilateral which has both its pairs of opposite sides parallel. A rectangle, fig. 14, is a parallelogram, having a right angle.

A square, fig. 14, is an equilateral parallelogram, having its length and breadth equal. A rhombus, fig. 15, is an oblique-angled parallelogram. A rhombus, fig. 16, is an equilateral rhomboid having all its sides equal, but its angles oblique. A trapezium, fig. 17, is a quadrilateral which hath not its sides parallel.

A trapezoid, fig. 18, has only one pair of opposite sides parallel. A diagonal is a line joining any two opposite angles of a quadrilateral. Plane figures that have more than four sides are, in general, called polygons. A pentagon is a polygon of five sides; a hexagon, of six sides; a heptagon, seven; an octagon, eight; a nonagon, nine; a decagon, ten; an undecagon, eleven; and a dodecagon, twelve sides. A regular polygon has all its sides and all its angles equal. If they are not both equal, the polygon is irregular. Any figure is equilateral, when all its sides are equal: and it is equiangular when all its angles are equal. A circle, B D A E, fig. 19, is a plane figure bounded by a curve line, called the circumference, which is everywhere equidistant from a certain point C within, called its centre. The circumference itself is often called a circle, and also the periphery. The radius of a circle CB, fig. 19, is a line drawn from the centre to the circumference. The diameter of a circle is a line AB, fig. 20, drawn through the centre, and terminating at the circumference on both sides. An arc, fig. 4, of a circle is any part of the circumference. A chord AB, fig. 21, is a right line joining the extremities of an arc ACB. A segment ACB, fig. 21, is a part of a circle bounded by an arc and its chord. A semicircle is half the circle, or a segment cut off by a diameter. The half circumference is sometimes called the semicircle.

A sector ACB, fig. 22, is any part of a circle which is bounded by an arc, and two radii drawn to its extremities. A quadrant, fig. 23, or quarter of a circle, is a sector having a quarter of the circumference for its arc, and its two radii are perpendicular to each other. A quarter of the circumference is sometimes called a quadrant. The height or altitude of a figure ABCD, fig. 24, is a perpendicular AB let fall from an angle A, or its vertex, to the opposite side CD, called the base. The circumference of every circle is supposed to be divided into 360 equal parts, called degrees; and each degree into 60 minutes, and each minute into 60 seconds, and so on. Hence a semicircle contains 180 degrees, and a quadrant 90 degrees. The French have a different method of division. (See Degree.) The measure of an angle, is an arc AB, fig. 22, or any circle contained between the two lines CA, CB.
which form that angle, the angular point C being the centre; and it is estimated by the number of degrees contained in that arc. An angle in a segment, BAC, fig. 25, is that which is contained by two lines, BA, CA, or BD, CD, drawn from any point A or D in the arc of the segment, to the two extremities of that arc B and C. An angle on a segment, or an arc, is that which is contained by two lines, drawn from any point in the opposite or supplemental part of the circumference, to the extremities of the arc, and containing the arc between them. Thus the angle BAC, fig. 25, is on the arc BC.

An angle ABC, fig. 26, at the circumference, is that whose angular point or summit is anywhere in the circumference. And an angle ADC at the centre, is that whose angular point is at the centre. A right-lined figure, fig. 27, is inscribed in a circle, if the circle circumscribes it, when all the angular points of the figure are in the circumference of the circle. A right-lined figure, fig. 28, circumscribes a circle, or the circle is inscribed in it, when all the sides of the figure touch the circumference of the circle. One right-lined figure, fig. 29, is inscribed in another, or the latter circumscribes the former, when all the angular points of the former are placed in the sides of the latter. Identical figures, are such as are both mutually equilateral and equiangular; or that have all the sides and all the angles of one, respectively equal to all the sides and all the angles of the other, each to each; so that, if the one figure were applied to, or laid upon the other, all the sides of the one would exactly fall upon and cover all the sides of the other; the two becoming as it were but one and the same figure. Similar figures, are those that have all the angles of the one equal to all the angles of the other, each to each, and the sides about the equal angles proportional. The perimeter of a figure, is the sum of all its sides taken together. A proposition, is something which is either proposed to be done, or to be demonstrated, and is either a problem or a theorem. A problem is something proposed to be done. A theorem is something proposed to be demonstrated. A lemma, is something which is premised, or demonstrated, in order to render what follows more easy. A corollary, is a consequent truth, gained immediately from some preceding truth, or demonstration. A scholium, is a remark or observation made upon something going before it.

Properties of Lines. Let the line AB, fig. 30, meet the line CD; then will the two angles ABC, ABD, taken together, be equal to two right angles. Let the two lines AB, CD, fig. 31, intersect in the point E; then will the angle AEC be equal to the angle BED, and the angle AED equal to the angle CEB. Let the line EF, fig. 32, cut the two parallel lines AB, CD; then will the angle AEF be equal to the alternate angle EFD.

Properties of Triangles.—In the two triangles ABC, DEF, fig. 41, if the side AC be equal to the side DF, and the side BC equal to the side EF, and the angle C equal to the angle F; then will the two triangles be identical, or equal in all respects. Let the two triangles ABC, DEF, fig. 41, have the angle A equal to the angle D, the angle B equal to the angle E, and the side AB equal to the side DE; then

\[ 2c2 \]
these two triangles will be identical. If the triangle ABC, fig. 42, have the side AC equal to the side BC; then will the angle B be equal to the angle A. The line which bisects the vertical angle of an isosceles triangle, bisects the base, and is also perpendicular to it. Every equilateral triangle, is also equiangular, or has all its angles equal. If the triangle ABC, fig. 42, have the angle A equal to the angle B, it will also have the side AC equal to the side BC. Every equiangular triangle is also equilateral. Let the two triangles ABC, ABD, fig. 43, have their three sides respectively equal, viz., the side AB equal to AB, AC to AD, and BC to BD; then shall the two triangles be identical, or have their angles equal, viz., those angles that are opposite to the equal sides; namely, the angle BAC to the angle BAD, the angle ABC to the angle ABD, and the angle C to the angle D.

Let ABC, fig. 44, be a triangle, having the side AB produced to D; then will the outward angle CBD be greater than either of the inward opposite angles A or C. Let ABC, fig. 45, be a triangle, having the side AB greater than the side AC; then will the angle ACB, opposite the greater side AB, be greater than the angle B, opposite the less side AC. Let ABC, fig. 45, be a triangle; then will the sum of any two of its sides be greater than the third side; as, for instance, AC + CB greater than AB. Let ABC, fig. 46, be a triangle; then will the difference of any two sides, as AB — AC, be less than the third side BC.

Let the side AB, fig. 47, of the triangle ABC, be produced to D; then will the outward angle CBD be equal to the sum of the two inward opposite angles A and C. Let ABC, fig. 46, be any plane triangle; then the sum of the three angles A + B + C is equal to two right angles. If two angles in one triangle, be equal to two angles in another triangle, the third angles will also be equal, and the two triangles equiangular. If one angle in one triangle be equal to one angle in another, the sums of the remaining angles will also be equal. If one angle of a triangle be right, the sum of the other two will also be equal to a right angle, and each of them singly will be acute, or less than a right angle. The two least angles of every triangle are acute, or each less than a right angle. Let ABC, fig. 49, be a right-angled triangle, having the right angle at C; then will the square of the hypotenuse AB, be equal to the sum of the squares of the other two sides AC, CB. Or \( AB^2 = AC^2 + BC^2 \).

Let ABC, fig. 49, be any triangle, having CD perpendicular to AB; then will the difference of the squares of AC, BC, be equal to the difference of the squares of AD, BD; that is, \( AC^2 - BC^2 = AD^2 - BD^2 \). Let ABC, fig. 49, 2nd, be a triangle, obtuse-angled at A, and CD perpendicular to AB; then will the square of AC be greater than the squares of AB, BC, by twice the rectangle of AB, BD. That is, \( AC^2 = AB^2 + BC^2 + 2AB \cdot BD \). Let ABC, fig. 49, 1st, be a triangle, having the angle A acute, and CD perpendicular to AB; then will the square of BC, be less than the squares of AB, AC, by twice the rectangle of AB, AD. That is, \( BC^2 = AB^2 + AC^2 - 2AD \cdot AB \). Let ABC, fig. 50, be a triangle, and CD the line drawn from the vertex to the middle of the base AB, bisecting it into the two equal parts AD, DB; then will the sum of the squares of AC, CB, be equal to twice the sum of the square of CD, AD; or \( AC^2 + CB^2 = 2CD^2 + 2AD^2 \). Let ABC, fig. 51, be an isosceles triangle, and CD a line drawn from the vertex to any point D in the base: then will the square of AC, be equal to the square of CD, together with the rectangle of AD and DB. That is, \( AC^2 = CD^2 + AD \cdot DB \).

Let ABC, DEF, fig. 52, be two triangles, having the angle A = the angle D, and the sides AB, AC, proportional to the sides DE, DF; then will the triangle ABC be equiangular with the triangle DEF. Let ABC, fig. 53, be a right-angled triangle, and CD a perpendicular from the right angle C to the hypotenuse AB; then will CD be a mean proportional between AD and DB; AC a mean proportional between AB and AD; BC a mean proportional between AB and BD. Let the two triangles ADC, DEF, fig. 54, have the same altitude, or be between the same parallels AE, CE; then is the surface of the triangle ADC, to the surface of the triangle DEF, as the base AD is to the base DE. Or, AD : DE :: the triangle ADC : the triangle DEF.

Let ABC, BEF, fig. 55, be two triangles having the equal bases AB, BE, and whose altitudes are the perpendiculars CG, FH; then will the triangle ABC : the triangle BEF :: CG : FH. Triangles when their bases are equal, are to each other as their altitudes; and when their altitudes are equal, they are to each other as their bases; therefore, universally, when neither are equal, they are to each other in the compound ratio, or as the rectangle or product of their bases and altitudes. Let DEF, fig. 56, be parallel to the side BC of the triangle ABC, then will AD : DB :: AE : EC. AB : AC :: AD : AE, AB : AC :: BD : CE.

Let the angle ACB, fig. 57, of the triangle ABC, be bisected by the line CD, making the angle \( r \) equal to the angle \( \alpha \); then will the segment AD be to the segment DB, as the side AC is to the side CB. Or AD : DB :: AC : CB.
In the two triangles ABC, DEF, fig. 58, AB : DE :: AC : DF :: BC : EF; the two triangles will have their corresponding angles equal.

Properties of quadrilaterals, &c. — Let ABCD, fig. 59, be a parallelogram, of which the diagonal is BD; then will its opposite sides and angles be equal to each other, and the diagonal BD will divide it into two equal parts, or triangles. If one angle of a parallelogram be a right angle, all the other three will also be right angles, and the parallelogram a rectangle. The sum of any two adjacent angles of a parallelogram is equal to two right angles. Let ABCD be a quadrangle, having the opposite sides equal, namely, the side AB equal to DC, and AD equal to BC; then shall these equal sides also be parallel, and the figure a parallelogram. Let AB, DC, be two equal and parallel lines; then will the lines AD, BC, which join their extremities, be also equal and parallel. Let ABCD, ABEF, fig. 60, be two parallelograms, and ABC, ABE, two triangles, standing on the same base AB, and between the same parallels AB, DE; then will the parallelogram ABCD be equal to the parallelogram ABEF, and the triangle ABC equal to the triangle ABE. Parallelograms, or triangles, having the same base and altitude, are equal. Parallelograms, or triangles, having equal bases and altitudes are equal.

Let ABCD, fig. 61, be a parallelogram, and ABE a triangle, on the same base AB, and between the same parallels AB, DE; then will the parallelogram ABCD be double the triangle ABE, or the triangle half the parallelogram. A triangle is equal to half a parallelogram of the same base and altitude, because the altitude is the perpendicular distance between the parallels, which is everywhere equal, by the definition of parallels. If the base of a parallelogram be half that of a triangle, of the same altitude, or the base of a triangle be double that of the parallelogram, the two figures will be equal to each other. Let AC, EG, fig. 62, be two rectangles, having the sides AB, BC, equal to the sides EF, FG, each to each; then will the rectangle AC be equal to the rectangle EG. Let AC, fig. 63, be a parallelogram, BD a diagonal, EF parallel to AB or DC, and GII parallelogram to AD or BC, making AI, IC, complements to the parallelogram EG, HF, which are about the diagonal DB; then will the complement AI be equal to the complement IC. Let ABCD, fig. 64, be a parallelogram, whose diagonals intersect each other in E; then will AE be equal to EC, and BE to ED; and the sum of the squares of AC, BD, will be equal to the sum of the squares of AB, BC, CD, DA. That is,

\[AE^2 + EC^2 = AB^2 + BC^2 + CD^2 + DA^2.\]

Let ABCD, fig. 65, be a quadrangle; then the sum of the four inward angles, \(\angle A + \angle B + \angle C + \angle D\) is equal to four right angles. Let ABCDE, fig. 66, be any figure; then the sum of all its inward angles, \(\angle A + \angle B + \angle C + \angle D + \angle E\), is equal to twice as many right angles, wanting four, as the figure has sides. Let \(\angle A, \angle B, \angle C, \angle D, \angle E\), fig. 67, be the outward angles of any polygon, made by producing all the sides; then will the sum \(\angle A + \angle B + \angle C + \angle D + \angle E\) of all those outward angles, be equal to four right angles.

Properties of Circles, &c. — Let AB, fig. 68, be any chord in a circle, and CD a line drawn from the centre C to the chord. Then, if the chord be bisected in the point D, CD will be perpendicular to AB. Let ABC, fig. 69, be a circle, and D a point within it; then if any three lines, DA, DB, DC, drawn from the point D to the circumference, be equal to each other, the point D will be the centre. Let two circles touch one another internally in the point; then will the point and the centres of those circles be all in the same right line. Let two circles touch one another externally at a point; then will the point of contact and the centres of the two circles be all in the same right line. Let AB, CD, fig. 70, be any two chords at equal distances from the centre G; then will these two chords AB, CD, be equal to each other.

Let the line ADB, fig. 71, be perpendicular to the radius CD of a circle; then shall AB touch the circle in the point D only, and be a tangent. Let AB, fig. 72, be a tangent to a circle, and CD a chord drawn from the point of contact C; then is the angle BCD measured by half the arc CFD, and the angle ACD measured by half the arc CGD. Let BAC, fig. 73, be an angle at the circumference; it has for its measure, half the arc BC which subtends it.

Let C and D, fig. 74, be two angles in the same segment ACD, or, which is the same thing, standing on the supplemental arc AEB; then will the angle C be equal to the angle D. Let C, fig. 75, be an angle at the centre C, and D an angle at the circumference, both standing on the same arc or some chord AB; then will the angle C be double of the angle D or the angle D equal to half the angle C.
If ABC or ADC, fig. 76, be a semicircle; then any angle D in that semicircle, is a right angle.

If AB, fig. 77, be a tangent, and AC a chord, and D any angle in the alternate segment ADC; then will the angle D be equal to the angle BAC made by the tangent and chord of the arc ABC. Let ABCD, fig. 78, be any quadrilateral inscribed in a circle; then shall the sum of the two opposite angles A and C, or B and D, be equal to two right angles. If the side AB, fig. 79, of the quadrilateral ABCD, inscribed in a circle, be produced to E; the outward angle DAE will be equal to the inward opposite C.

Let the two chords AB, CD, fig. 80, be parallel; then will the arcs AC, BD, be equal; or AC = BD. Let the tangent ABC, fig. 81, be parallel to the chord DF; then are the arcs BD, BF, equal; that is, BD = BF. Let the two chords AB, CD, fig. 82, intersect at the point E; then the angle AEC, or DEB, is measured by half the sum of the two arcs, AC, DB.

Let the angle E, fig. 83, be formed by two secants EAB and ECD; this angle is measured by half the difference of the two arcs, AC, DB, intersected by the two secants. Let EB, ED, fig. 84, be two tangents to a circle at the points A, C; then the angle E is measured by half the difference of the two arcs CFA, CGA. Let the two lines AB, CD, fig. 85, meet each other in E; then the rectangle of AE, EB, will be equal to the rectangle of CE, ED. Or, AE, EB = CE, ED.

When one of the lines in the second case, as DE, fig. 86, by revolving about the point E, comes into the position of the tangent EC or ED, the two points C and D running into one; then the rectangle of CE, ED, becomes the square of CE, because CE and DE are then equal. Consequently, the rectangle of the parts of the secant, AE, EB, is equal to the square of the tangent, CE. Let CD, fig. 87, be the perpendicular, and CE the diameter of the circle about the triangle ABC; then the rectangle CA, CB is = the rectangle CD . CE. Let CD, fig. 88, bisect the angle C of the triangle ABC; then the square CD² + the rectangle AD . DB is = the rectangle AC . CB.

Let ABCD, fig. 89, be any quadrilateral inscribed in a circle, and AC, BD, its two diagonals; then the rectangle AC. BD = the rectangle AB . DC + the rectangle AD . BC. Similar figures are to each other, as the squares of their like sides. Similar figures inscribed in circles, have their like sides, and also their whole perimeters, in the same ratio as the diameters of the circles in which they are inscribed. Similar figures inscribed in circles, are to each other as the squares of the diameters of those circles. The circumferences of all circles are to each other as their diameters. The areas or spaces of circles, are to each other as the squares of their diameters, or of their radii.

Such are the leading properties of lines and plane figures. The more important details regarding planes and solids, will be discussed under the articles, PLANES, GEOMETRY of; and SOLIDS, GEOMETRY of. For the method of constructing geometrical figures, see Mathematica, Practica, &c.

GEORGE, LAKE: a lake in New York, south of lake Champlain, with which it communicates. It is situated but a short day's ride from Saratoga springs, from which an excursion to the lake is considered a matter of course. Besides the interest which is excited from the association of many important historical events connected with the lake and its shores, it is peculiarly interesting from its romantic scenery. It generally varies from three-fourths of a mile to four miles in width. The whole length is thirty-six miles. The waters are discharged into lake Champlain at Ticonderoga, by an outlet which, in the course of two miles, sinks 180 feet. Lake George is remarkable for the transparency of its waters. They are generally very deep, but at an ordinary depth the clean gravelly bottom is distinctly visible. A great variety of excellent fish are caught here. Salmon trout abound, and weigh from twelve to twenty pounds. The lake is interspersed with a great number of small islands, the principal of which, Diamond island, once contained a small fortification. The scenery on the shores is generally mountainous. With the exception of some intervals checkered with fruitful cultivation, the land reedes from the lake with a gentle acclivity for a few rods, and then, with a bolder ascent, to an elevation of from 600 to 1500 feet. The best view of the lake and its environs is from the southern extremity, near the remains of old fort George, whence the prospect embraces the village of Caldwell, with numerous small islands. The calm waters of the lake are seen, beautifully contrasted with the parallel ridges of craggy mountains, through an extent of nearly fourteen miles. Near the southern shore are the ruins of an old fortification, called fort William Henry, taken by the marquis de Montcalm, in 1757, with its garrison of 3000 men, nearly all of whom were massacred by the Indian auxiliaries of the French. From this spot
general Abercrombie embarked, in 1758, with an array of 15,000 men, for an attack on Ticonderoga. Black mountain, on the eastern side of the lake, eighteen miles from the head, has been ascertained, by admeasurement, to be 2200 feet high. Many points in and around the lake have historical reminiscences connected with them.

GEORGE, the holy knight, St; according to ancient legends, a prince of Cappadocia. His greatest achievement was the conquest of a dragon, by which he effectuated the deliverance of a king’s daughter. He is commonly represented by the artist in full profile, with the formidable dragon writhing at his feet. The drawing is founded on the tradition that Aja, the daughter of an ancient monarch, was met by a dragon, which attacked her, and threatened to devour her. At this fearful moment, the knight passed by, slew the dragon, and rescued the lady. The legend has, probably, come to us from the East, and belongs to the age of the crusades. The ancient Christian emperors bore the knight upon their standards. To these sacred banners the crusaders attributed a miraculous power, and were sure of conquest while they floated above their heads. The dragon denoted the heathen power of the Turcoman, the dragon protec- tor and patron of the ancient nation. St George is the Christian Perseus.

GEORGE, Lewis I., King of Great Britain, and elector of Hanover, was the son of the elector Ernest Augustus, by Sophia, daughter of Frederic, elector palatine, and grand-daughter to James I. He was born in 1660, and was early trained to arms under his father. In 1682, he married his cousin, Sophia Dorothea, daughter of the duke of Zell. He then engaged in the service of the emperor, and signalized his valor in three campaigns against the Turks in Hungary, in 1700, he ascended the crown, and in this successful career, he joined in the alliance against France. The command of the imperial army was conferred upon him after the battle of Blenheim, in 1707; but, owing to jealousies among his confederates, he resigned the command at the end of three campaigns. At the peace of Rastadt, Louis XIV. recognized the electoral dignity in the house of Lun- enburg, as he had already, by the treaty of Utrecht, recognised the succession of the same house to the throne of Great Britain, which event took place on the death of Anne, in 1714, when “the elector was in the fifty-fourth year of his age. On the accession of George I., he bore a double existence, not only a sovereign, who alone maintained the principle by which the Stuarts had been set aside. Owing to the disaffection of the high church clergy and the Jacobites, tumults ensued in various parts of the country, until at length, in 1715, the earl of Mar openly proclaimed the Pretender in Scotland. This insurrection, being ill- seconded by the English Jacobites, was entirely quelled, and several of the leaders lost their lives on the scaffold. The disaffection to the new family con- tinued, however, so great, that the whigs were driven into some unpopular measures, with a view to sup- port it, the most indefensible of which was the sep- tennial act, extending the duration of parliaments, for three years to seven. The king, who probably con- sidered the possession of the British crown precarious, sought to increase the value of his German territories by the purchase of Bremen and Verden, which accession he determined to support against the claims of Sweden, at the same time extending the duration of payments that were in arrear with Charles XII, who, in conjunction with the czar Peter, projected an invasion of Scotland in favour of the Pretender. To obviate this danger, George entered into an alliance with Holland and France. The death of Charles XII, in 1717, put an end to this alarm, which was soon renewed by the project of the cele- brated Spanish minister, cardinal Alberoni, who formed a quadruple alliance between the three powers already mentioned, with the accession of the emperor. The seizure of Sardinia, and invasion of Italy by the Spaniards, gave pretence for the sailing of a British fleet to the Mediterranean, under Sir George Byng, who nearly destroyed the whole of the Spanish fleet off Sicily. This success was followed by the recovery both of Sicily and Sardinia. Spain was obliged to accede to the terms of the allied powers, and a pacification of the north of Europe was entered into by the mediation of Great Britain. In 1722, a new conspiracy against the gov- ernment was discovered, which led to the apprehen- sion of several persons, among whom was the cele- brated Atterbury, bishop of Rochester, who was exiled for life. In 1725, a treaty between Spain and the em- peror excited king George’s jealousy so much that he deemed it necessary to counteract it by another at Hanover, comprising most of the other European powers. The Spaniards then commenced the siege of Gibraltar; but all differences were finally settled by a negotiation, during which the king, who had set out on a journey to the continent, was seized with an acute paralytic sickness. The monarch died in the presence of the protector and patron of the ancient nation. St George is the Christian Perseus.

GEORGE, Augustus II., king of Great Britain, son of George I., was born in 1683. He married, in 1703, Wilhelmina Dorothea Carolina of Brandenbourg-Anspach, and came to England with his father at the accession of the latter, who was created prince of Wales. He was made regent dur- ing the king’s visit to the continent in 1716, but, a political difference ensuing, he lived some time estranged from the court. This breach was finally accommodated, and, in 1727, he succeeded to the throne. He inherited in full force the predilection of George I, for Germany; and the same system of politics and the same ministers continued to govern the nation after his accession as before it. (See Walpole, and Britain.) On the death of the em- peror Charles VI., France and other powers en- voyed to his daughter, Maria Theresa, of her inheritance, which condition succeeded George II., as guarantee of the pragmatic sanction, to de- clare in her favour. An English army was accord- ingly sent to the continent, and strengthened by a body of Hanoverians in British pay. The king him- self shared in the campaign, the conduct of which was, however, intrusted to the earl of Stair. The battle of Dettingen followed, in which the French were defeated, but with little benefit to the victors, who were obliged to quit the field of battle and abandon their wounded. In this battle, the king displayed great bravery; but, as he interfered with the direction of lord Stair, that officer soon after resigned in disgust, and the command of the army was intrusted to the king’s second son, William, duke of Cumberland, who lost the bloody battle of Fontenoy, in 1744, and the French remained ascend- ant in Flanders during the rest of the war. In 1745, the young prince was removed to the northern part of the island, and took possession of Edin- burgh. Having defeated the royal troops at Preston- pans, he entered England; but, although he pen- etrated without opposition as far as Derby, the peo- ple showed but little inclination to his cause. The arrival of the duke of Cumberland with several regi-
ments from Flanders, and the rapid assemblage of troops from all quarters, to oppose and intercept him, decided him to retreat, and the battle of Culloden, April 17, 1746, terminated the struggles of the house of Stuart. (See Edward, Charles.) During these events, the king received numerous demonstrations of attachment to his person and family; and it was obvious that the greater part of the nation connected the interests of civil liberty with the support of the principles which had called the house of Hanover to the throne. In 1748, the war, which had been very unproductive of advantage to England, was terminated by the treaty of Aix-la-Chapelle. In 1751, died Frederick, prince of Wales, who, having lived for a considerable time at variance with his father, was naturally thrown into the opposition party, and thereby, in a manner which has not been unusual with English heirs-apparent, became the avowed patron of popular maxims of government.

In 1755, the disputes between Great Britain and France, in relation to their respective boundaries in Canada, produced hostilities in that country, and an open war between the two nations the following year. The events of this war, in which the principal powers of Europe became engaged, under the able auspices of Pitt (first earl of Chatham), raised Great Britain to the pinnacle of power. In this state of affairs, George III. ascended the throne, October 25, 1760, in the seventy-seventh year of his age and thirty-third of his reign. George II. was a prince of very moderate abilities, parsonious, and wholly regardless of science or literature; hasty and obstinate, but honest and open in his disposition. His queen, the cultivated and well-informed Caroline, acquired a great ascendency over him, which did not, however, prevent some of the irregular attachments so common with royalty.

GEORGE III., king of Great Britain, born June 4, 1738, was the eldest son of Frederic, prince of Wales, by the princess Augusta of Saxe-Gotha. On the death of his father in 1761, his education was intrusted to the earl of Harcourt and the bishop of Norwich; but the formation of his opinions and character seems to have been materially influenced by the maternal ascendency of the princess dowager, who was principally guided by the counsels of the earl of Bute. George III., who had been previously created a prince of Wales, was then one on the eve of the demise of his grandfather, George II., October 25, 1760, being then in his twenty-third year. A prosperous war having made the existing administration, headed by Pitt (afterwards earl of Chatham), exceedingly popular, no immediate change was made in the cabinet, and the first speeches of the new king to his council and parliament were favourable to the anticipations formed of the conduct of a young prince of unsputed reputation, who enjoyed the advantage of being the first sovereign of the line born and educated in England. In 1761, the Pitt administration exchanged Mr. Legge and lord Holderness for viscount Barrington and the earl of Bute—a fact worthy of notice, as commencing that series of incessant ministerial changes which distinguished the first ten years of the reign of George III. In the same year, Mr Pitt resigned the seals of foreign secretary, in consequence of being oustved in the cabinet on the subject of a war with Spain. The marriage of the king with the princess Charlotte Sophia of Mecklenburg-Strelitz, in which he (as a prince of Wales) had previously concurred, was affected in the domestic character of this reign) also took place in 1761. A new administration, formally headed by lord Bute, having entered into negotiations with France and Spain, preliminaries of peace with those nations were signed, November 3, 1762, at Fontainebleau. In 1763, the publication of the North Briton, by Wilkes (q. v.), in a spirit of unsparing censure of the Bute administration, led to a series of measures, the result of which proved favourable to the interests of civil liberty. In 1764, Mr. George Grenville, who had become premier by the retirement of the earl of Bute, began those measures in relation to the American colonies, the consequences of which proved so momentous; and the stamp act was passed the following year. About the same time, in consequence of some appearances of the mental derangement of the king, a bill was passed to enable his majesty to appoint the queen, or any of the royal family residing in England, guardian to his subjects, and thereby enabled the king to effect the appointment of the ministry to confine the term royal family to the descendants of George II., with the exclusion of the princess dowager of Wales, caused another change of administration, in which the marquis of Rockingham was placed at the head of the treasury. In 1766, the new administration repealed the American stamp act; at the same time passing a declaratory act, asserting the right of taxing the colonies. The Rockingham cabinet was dissolved, July 30, 1766, and succeeded by one formed by the earl of Chatham, who took the office of lord privy seal. In 1768, lord Chatham, disgusted with the conduct of his colleagues, resigned the privy seal, and was succeeded by lord North, who was distinguished by the return of Mr Wilkes for Middlesex, and the popular tumults attendant upon his imprisonment and outlawry. (See Wilkes.) The year 1770 was signalized by another change of administration, which rendered lord North premier; by the passing of the Grenville act in regulation of the proceedings of the house of commons, in regard to contested elections: by a bold address and remonstrance to the throne from the livery and corporation of the city of London; and by the celebrated letters of Junius. In the session of 1771, the house of commons made an attempt to suppress the publication of their debates, which failed; and the debates have been published ever since. In 1772, the marriages of the dukes of Gloucester and Cumberland with lady Waldegrave and Mrs Horton, produced the royal marriage act, which prevents the members of the royal family from marrying, without the king's approbation, before the age of twenty-five; as also the subsequent act in relation to the divorce of princess Wilhelmina, attempted to restrain marriage by artificial means. In 1773 the discontent in America burst into an open flame, and a royal message in the commencement of the sessions of 1774, called on parliament to maintain the supremacy of the mother country. (See United States.) Notwithstanding the disastrous American war, and the loss of an empire, George III., by the steadiness with which he put down the coalition administration, acquired a degree of popularity which never afterwards entirely deserted him. The smooth course of the early years of the administration of Mr Pitt, materially added to this disposition, which exhibited itself very strongly when the constitutional malady of the king again displayed itself in 1789, and still more upon his subsequent recovery. In reference to the French revolution, and the important contests which arose out of it, it is sufficient to remark, that George III. zealously coincided in the policy adopted by his administration. A similar observation will apply to the domestic, and Irish situation; the British policy was also to the transactions connected with the Irish rebellion. George III. was immovable in his opposition to the demands of the Irish Catholics, and, secondly, by the influence of the church, and the popular feeling, was enabled to eject the Fox and Grenville administration, which succeeded on the death of Mr Pitt. The proceedings of the Perceval
administration, until the final retirement of the king in 1810, need not be detailed here; while the in- sistence of the prince on the interval which elapsed from his retirement to his death a blank in his biography. His decease took place, January 29, 1820, in the 82d year of his age, and 59th of his reign. George III. possessed personal courage and steadiness of character in a high degree. Of a plain, simple, but not enlarged understanding, he acted upon his convictions, but in that respect was strong. His temper and amusements were plain and practical. Literature and the fine arts engaged but a small share of his atten- tion, and hunting, agriculture, mechanical contriv- ances, and domestic intercourse, seem to have chiefly occupied his leisure. Religious, moral, and tem- perate, the decorum of his private life was always exemplary. His deportment as a father and a hus- band, according strictly with the national notions of propriety, rendered him and the queen a constant theme of praise; and the throne was regarded as a pattern in respect to the conjugal duties.

GEORGE IV., Frederick Augustus; king of Great Britain, son of George III. and the prin- cess Charlotte of Mecklenburg-Strelitz, born August 12, 1762, declared regent of Great Britain and Ireland, with limited powers, February 3, 1811, and regent of the new kingdom of Hanover in 1812. He was, at the time, with much strictness, by doctor Markham, subsequently archbishop of Canterbury, and doctor Jackson, and, after 1776, by doctor Hurd (bishop of Worcester), and Mr. Arnold of St John’s college, at Cambridge. With a good education and good talents, the prince of Wales united a prepossessing exterior. He was easy and graceful in his manners, affable and winning in his intercourse with others, and one of the handsomest men in the king- dom; the idol of the women and of the people, al- though abandoned to debauchery and gross excesses, in company with colonel St Leger, colonel (since general) Tarleton, and others. He now aimed at popularity, associated with the whig nobility, and formed political connexions with lord Moira, Fox, Burke, Sheridan—the leaders of the opposition. After abandoning his former mistress, Mrs Robinson, he attached himself to the beautiful widow Fitzher- bert, a Catholic, and the opinion was very prevalent that a marriage actually took place between the par- ties. The union of the prince and lady Moira facilitated and the union. His dissipated mode of life, and the building of Carlton house, had loaded him with a debt of more than £200,000 sterling, his income be- ing at this time £50,000. The refusal of his father to assist him, compelled him to adopt a system of re- trenchment, in which he persevered for nearly a year. He sold his stud of running horses, discharged many of his state servants, stopped building, &c. His case having finally been laid before parliament, in 1787, Pitt acted as mediator, and parliament granted £160,000 for the payment of his debts. The ma- lady of the king (1788) having raised the question of a restoration, the prince promulged his intention of the powers of the regent, which Fox in vain opposed. (See Pitt and Fox.) The Irish parliament concurred with Fox. In 1795, the prince consented, on condition of the payment of his debts, to marry the princess Caroline of Brunswick. The marriage took place, April 8, 1795. The queen of course had a large increase to her fortune, and the prince himself an increase of £125,000 sterling. When Napoleon threatened Britain with an invasion, the prince, then only colonel of a regiment of dragoons, while his brothers were generals, and the duke of York was commander-in-chief, desired to be promoted; but the ministry and the king to whom he made pressing applications on the subject, laid the case before the prince as regent, February 6, 1811, with some limitations on his exercise of the royal power, by act of parliament. He could not, for example, name any peers, except for important appointments, for life, &c. As he did not constitute the ministry, the principles on the principles of his former friends, but continued the Pitt party in power, he came to an open rupture with his former supporters. Guided by the policy and advice of Liverpool and Castlereagh, he contributed so powerfully to the success of legitimacy, that Louis XVIII., after his restoration, had no hesitation in de- claring, for his crown, under God, to the prince of Wales. Soon after that event, he received the em- peror Alexander, the king of Prussia, and other foreign princes, in London, with great splendour. July 14, 1815, Napoleon addressed to the regent his petition for an asylum at "Like Themistocles," said his letter, "I throw myself upon the protection of the most constant, and the most generous of my enemies." But the British policy was governed by other preced- ents than the stories of Pitharcar. August 12, 1815, he founded the Hanoverian civil and military order of the Guelph, and (1818) the English order of St. Patrick. To the holy alliance he gave his assent only in his in- dividual character, Oct. 6, 1815, the principles of the English constitution not permitting his formal acces- sion as king. At the same time, he undertook the guardianship of the duchy of Brunswick, in which, in 1819, he re-established the old feudal estates. In March, 1816, his Grace of Hanover married his daughter, Charlotte, to prince Leof- pold of Saxe-Coburgh, which took place, May 2. The interruption of the demand for manufactures after the peace gave rise to much distress and discontent among the people, and an unsuccessful attempt was made on the life of the prince regent, as he was going to Westminster, January 28, 1817, to open the session of parliament. In October, 1818, his ambas- sadors at the congress of Aix-la-Chapelle subscribed to the declaration of November 19. France and Britain, at this congress, were appointed to compel the Barbary states to observe the law of nations towards Europe. The king forbade any of his sub- jects to enter into the service of the insurgents in Spanish America. The abolition of the slave-trade was more and more strictly enforced. At home, the stoppage of trade produced continual fermentations; especially when the magistracy of Manchester, Aug. 18, 1819, laid down the franchise, and the un- stoppage of people, met to discuss the question of parlia- mentary reform, on which occasion many lives were lost. The distresses of the poor, after a twenty-three years’ war, which in addition to the prodigious amount raised by taxes during its continuance, had increased the national debt to about £500,000,000, sterling, could only be gradually relieved, and strong measures were adopted for restraining the malo- nent, especially in Ireland, where bloody commo- tions had broken out. Parliament, for the sake of assisting emigrants, established, in 1819, a military colony at the cape of Good Hope, on the borders of Caffraria. Therefore, nor man, and possesses of the kingdom, meanwhile, were increasing. (See Britain, and Hindostan.) George IV., who suc- ceeded his father, January 29, 1820, was crowned in Westminster abbey, July 19, 1821, with the ancient ceremonies; and, to increase the splendour of the coronation occasion, every prince and potentate of the other powers of Europe. Previous to this, a pro- cess was instituted before the house of lords, against the queen, Caroline, for misconduct, for the purpose of depriving her of the rights and privileges of queen of England. (See Caroline, queen of England.) Soon after his coronation, the king undertook a long journey to the Netherlands, etc. On the eve of the queen’s death, August 7, 1821. On this occa-
sion, the Orangemen and the Catholics did not appear to greet the monarch. After a succession of feasts, George returned to London. September 30 of the same year, the king visited his German dominions, after having appointed a commission of government, under the presidency of his brother, the duke of York. In 1822, he made a similar visit to Scotland. The death of the marquis of Londonderry (q.v.), August 12, recalled him to London, where he arrived, September 1. He sent the duke of Wellington to the congress at Verona, and, at the earnest solicitation of lord Liverpool, supported by the public voice, appointed Canning, although his opposition to the proceedings against the queen had offended him, secretary of foreign affairs. An alteration in the political system was made by this statesman, and the neutrality of England in the French and Spanish war was the result. In consequence of the illness of lord Liverpool, Canning was appointed prime minister in April, 1827. On his death, in August following, Mr. Robinson, created viscount Goderich, succeeded him, who was himself succeeded by the duke of Wellington, in January, 1828. George IV. founded the royal society of literature, in 1820, and gave the library of his father to the nation. It contains, besides pamphlets, maps and plans, 65,250 volumes, and is deposited in the British museum. The most remarkable part of the latter is the register of the third kingdom, and, for the reign of George IV., was the bill abolishing the disabilities on the Roman Catholics (see Catholic Emancipation), passed in April, 1829. The king, in the latter part of his life, suffered much from the gout and other disorders, having been all his life addicted to the pleasures of the table. George died, June 26, 1830, and was succeeded by his second brother, the duke of Clarence (William IV.), who also childless. The only child of the late duke of Kent (who died 1820), third brother of the king, the princess Victoria, born 1819, is the hearse presumptive to the throne of Britain.

GEORGE CADOUAL, chief of the Chouans (q.v.), was the son of a village miller, near Auray, in the Morbihan. When Bretagne took up arms, he entered the service as a common horseman, joined the army of the Vendée with a body of Bretons, after it had passed the Loire, and, at the siege of St. Pierre, was distinguished and admired by his strength and courage. After the reverses at Mans and Savamy, he took refuge in his native province, where he enlisted peasants and sailors out of employ, and placed himself at their head. Being surprised by a republican column, he was thrown into prison, in Brest, with his father. After a long captivity, he escaped in the dress of a sailor, and again took the chief command of his canton. He now endeavoured to remove the nobles from the command, and, from the year 1795, was considered as the head of a plebeian party. In 1796, he had the command of the division of the Morbihan. In 1799, he again took up arms, was among the chiefs who were accompanied by the greatest number of followers, and, according to the accounts of the republicans, enjoyed the entire confidence of his troops. He was even spoken of as generalissimo. About that time, he again occupied Lower Bretagne, and was the only general-in-chief who was not noble. He was created viscount, a title which was increased to marquis, and was sent to receive a supply of muskets and cannons, which had been landed on the banks of the Vilaine, by the British. He, for a long time, refused the proposals of peace offered by the consul Bonaparte; but, after the engagements of Cosne-Fort (January 25 and 26, 1800), finding that all the chiefs, Fratire only excepted, had submitted to the republic, he resolved to conclude peace. February 9, knowing that general Brune was reconquering the country, was accompanied only by two Chouans, at the village of Theix, and, having informed the general, by one of his companions, of his desire to speak to him, he had an interview with him in the open field, and the conditions were arranged within the space of an hour. George promised to dismiss his troops, and to surrender his arms. The conditions having been signed by the consul, he went to Paris, on the invitation of Bonaparte, who endeavoured to convince him and other chiefs of the Vendée, of the propriety of their submitting to the existing government. They all went away satisfied with the first consul, except George. He afterwards went to London, where he met with a favourable reception from the French princes and the British ministers. The idea of the infernal machine is said to have originated with him. He, however, constantly denied having had any share in it. In August, 1803, George and Pichegru landed on the coast of Normandy, to execute a plan, which had been devised in Britain, of exciting commotions in France, and assassinating the first consul. They were taken over by a captain Wright, in a vessel belonging to the British navy. Pichegru, George, and Moreau were to act as chiefs in this conspiracy, which was, however, detected and frustrated by the vigour of Talleyrand. The reigns were concealed in the capital until March, 1804, when he was arrested near the Luxembourg, after he had driven about in a cabriolet for two days, not being able to get out of the walls of Paris. He defended himself by discharging two pistols, which brought two police officers to the ground. He then jumped from the vehicle, and endeavoured to escape, but he was surrounded by the crowd and secured. He was carried to the prefecture, and thence to the temple. The tribunal, before which he was tried, with a great number of accomplices, found him guilty of an attempt on the life of the first consul, and he was condemned to death, May 11, 1804, and executed at Paris, June 24. He was thirty-five years old, showed, during his trial, the greatest coolness, was very careful not to expose his accomplices by his answers, and openly proclaimed his adherence to the cause of the Bourbons.

GEORGE CADOUAL. The ancient English coin of the size of a double ducat, which was coined under Henry VIII., in 1540. The name is from the holy knight St George, whose image is coined on it. The gold is of twenty-two carats.

GEORGETOWN; a post-town and port of entry, Washington county, and district of Columbia, on the north-east bank of the Potomac, about 300 miles from its mouth, and 300 from the capes of Virginia, three west of the capitol in Washington; lon. 77° 5′ W.; lat. 38° 55′ N.; population in 1810, 4948; in 1820, 7360; in 1830, 8441. It is separated from Washington by a small river, called Rock creek, over which there is a magnificent bridge. It contains, besides a house, a college, a Lancasterian school, a public library, four banks, and houses of public worship for Episcopalians, Presbyterians, and Methodists. The situation is very pleasant, commanding a beautiful view of the river, the city of Washington, and the surrounding country. The houses are principally built of brick, with some of stone. The banks of the Potomac, the hills, near the town, are several fine country seats. The situation is very healthy, and the water excellent. It is a flourishing town, and a place of considerable trade. In consequence of the difficulties of navigation occasioned by a bar three miles below the town, considerable part of the produce is transported to Alexandria, and exported from
that place. Georgetown college is a Catholic insti-
tution, under the direction of the incorporated Catholic
clergy of Maryland. It was first incorporated in 1799, and
was under the presidency of the Rev. John Carroll.
The number of students is about 200.
GEORGETOWN; a post-town, port of entry, and
capital of Georgetown district, South Carolina, on the
west side of Winnow bay, at the entrance of Sumpit
ter river, twelve miles from the sea, sixty north
northeast, Charleston, 138 miles south, 53 miles
79° 20' W.; lat. 32° 22' N.; population, about
2000. It contains a court-house, a jail, a bank, an
academy, and several houses of public worship.
The Pedee, Waccamaw, and Black rivers flow into
Winyaw bay, and connect Georgetown with the
back country. At the mouth of the bay there is a
bar, which prevents the entrance of vessels drawing
more than eleven feet of water.
GEORGIA; one of the United States, bounded
north by Tennessee and North Carolina; north-east
by South Carolina, from which it is separated by
Savannah river; south-east by the Atlantic ocean;
and west, to the westward of the Mississippi, by
Alabama. The Chattahoochee river forms the western boundary, 157 miles, to Miller's Bend. The remainder of the
line runs north ten degrees west. Georgia extends from
lat. 30° 19' 48" to 33° N., and from lon.81° to
89° 17' W. It is 300 miles long from north to south,
and 240 east to west, and contains the counties of
58,000 square miles. Population in 1790, 82,000;
in 1800, 162,000; in 1810, 322,432; in 1820, 340,989;
in 1830, 225,048 whites, and 175,882 blacks; total
400,930. The number of counties, in 1827, was sev-
enty. Milledgeville, on the Oconee river, is the seat of
administration. Savannah and Augusta are the largest
towns. The principal rivers are the Savannah, Ogeechee, Alatamaha, Satilla, Oakmulgee, Oconee, St. Mary's, Flint, Chattahoochee, Tallapoosa and
Coosa. The coast of Georgia, for four or five miles
inland, is a salt-marsh, mostly uninhabited. In front
of this, towards the sea, there is a chain of islands of
gray, rich soil, covered, in their natural state with
pine, hickory, and live oak, and yielding, when
cultivated, sea-island cotton. The principal of these
islands are Tybee, Warsaw, Ossabaw, St. Bartharine's,
Sapelo, St. Simon's, Jekyll, and Cumberland. The
land bordering on the salt marsh is of nearly the
same quality as the pepper near this margin, commence the pine
barrens. The rivers and creeks are bordered with swamps or marsh,
which, at every tide, for fifteen or twenty miles from the
coast, are either wholly or partially overflowed.
These constitute the rice plantations. The pine
barrens extend from sixty to ninety miles from the
sea, beyond which the country becomes uneven,
diversified with hills and mountains, and possesses a
strong, rich soil. This section produces cotton, tobacco,
Indian corn, wheat, and other kinds of grain.
The north-western part of the state is mountainous,
and abundant in saline springs. The staple production is cotton. The sea-island cotton
is of the very best quality, and is commonly worth
about twice as much as that which grows in the interior of the country. Rice is produced in large
quantities, and of good quality. Some tobacco is also
raised for exportation. The quantity of cotton
exported from Savannah in the year ending Septem-
ber 30, 1830, was 247,669 bags, and from Darien
3,056 bags. The exports of rice from Savannah for
the year ending September 30, 1826, were 11,455
long tons; and of tobacco, 170 hogheads. Consider-
able quantities of the smaller articles were also exported
from this port to the West India markets, as sugar,
and St. Mary's. The forest of Georgia affords an
abundant supply of fine timber, consisting chiefly of oak, pine,
hickory, mulberry and cedar.

Melons grow here in great perfection, and figs are
common. Oranges, limes, citrons, pears, peaches,
and a few other fruits of mild climates, are also
cultivated. A part of the soil is well suited to the
grape vine. The climate is more mild than in the
same latitude on the Mississippi river. The mer-
cury in summer, rises to ninety degrees, and some-
times as high as ninety-six, or even a hundred. This
is true of nearly every part of the United States.
But the winters are mild. In Charleston, and in a
few miles back from the sea, there is a few days of snow and cold, which are never
uncommon, in the same latitude, on the Atlantic coast.
In the low country of Georgia, near the swamps,
bilious complaints and fevers are very common dur-
ing the months of July, August, and September.
At the approach of this season, the rich planters,
with their families, remove either to the sea-islands, or
to more elevated situations. The legislature of Georgia,
called the general assembly, consists of a senate and a
house of representatives. It meets on the first Monday of
November. Its members are chosen by counties, each county sending one senator; and from one to
four representatives, according to its population. A
number of negroes, in various parts of the state, are
employed, under overseers, in working on roads and
rivers. According to the report of the committee of
internal improvement, the canal from the Savannah to
the Ogeechee was expected to be completed in March,
1823; at the head of a number of water volunteers,
the design is to extend the canal to the Alatamaha, making
its length seventy-two miles. The principal literary
seminaries in this state is Franklin college, or the uni-
versity of Georgia, at Athens, which has funds to the
amount of 136,000 dollars, of which 100,000 dollars
are invested in the bank of the state of Georgia,
which stock the state guarantees to yield eight
per cent. per annum. According to Sherwood's Gazette-
teer of Georgia, "there are about eighty incorporated
academies in this state, 54 of which have been
brought into operation. The average number of
pupils in each is 47 = 3008. In the northern and
southern sections of the state, there are probably
five common schools in each county; forty counties,
thirty pupils each, = 6000; in the middle section,
say seven common schools in each county, twenty-five
counties, = 5250; total number of pupils in the
academies and common schools, 14,558. The state
possesses academies and common schools to the
considerable amount. By an act of the legislature
of 1792, each county academy was allowed to purchase
the value of £1000 of confiscated property; 1000
acres of land in each county were granted for the
support of schools, and also a fund of 250,000 dollars
to be vested in stocks for the same purpose. The
most numerous denomination of Christians in Geor-
gia are the Baptists. Next to these are the Metho-
dists. The first settlement in Georgia was made at
Savannah, in 1733, by general Oglethorpe, who was
also its first governor. The white inhabitants have
very slowly increased since then. There are now about
ten thousand Indians in this state have been more disposed than
in others to adopt the arts of civilized life. For the
same reason, the population is still small, consider-
ing the great extent of its territory. Two consid-
erable tribes of Indians reside partly within the char-
tered limits of this state—the Cherokee in the
north-western part, and the Creeks in the western.
The Cherokees have made greater advances in the arts of
civilized life than any other tribe of North Ameri-
can Indians. A proposition to remove them to the
west of the Mississippi, which has been recently
made, has excited a deep interest throughout the
country; and the same measures will be pursued as
shall be consistent at once with justice and humanity, with the welfare of the Chero-
GEORGIA.

The Cherokees have rapidly advanced towards civilization. They now live in comfortable houses, chiefly in villages, and cultivate large farms. They raise large herds of cattle, which they sell for beef, to the inhabitants of neighboring states. Many mechanical arts have been introduced among them. They have carpenters and blacksmiths, and many of the women spin and weave, and make butter and cheese. The population, instead of decreasing, as in the case generally with tribes surrounded by the whites, increases very rapidly. There are now 13,563 natives in the nation; 147 white men and 73 white women have intermarried with them. They own 1,277 slaves. Total, 15,060 souls. Increase in the last six years, 3,563.

Their government is republican, and power is vested in a committee and council, answering to our senate and house of representatives. The members are elected once in two years. Newtown is the seat of government; here the judges hold their courts, and prevent entirely the use of ardent spirits during the sessions of their courts. The mission at Spring Place was established in 1801. Since that time, nearly a dozen have been brought into operation in various parts of the nation. The number of children in the several missionary schools is nearly 500, all learning the English language. The cultivation of silk, which, in all probability, will become a valuable branch of industry in the United States, has been successfully attempted in Georgia. A gentleman in Augusta is said to have obtained silk of excellent quality. It must be remembered that the wild mulberry grows in abundance in the vicinity of Augusta.*

GEORGIA, GULF OF; a large gulf of the North Pacific ocean, between the continent of North America and Quadra and Vancouver's island; about 120 miles in length from north to south; the breadth varies greatly in its different parts, from six miles to twenty. It contains several clusters of islands, and branches off into a great number of coves. It communicates with the ocean, on the north, by Queen Charlotte's sound, and on the south by the strait of Juan de Fuca.

GEORGIA (in Persian, Gurijstan; in Russian, Grasias, Graasina; by the natives called Iberia); a country in Asia, which is bounded by Circassia, Daghestan, Shirvan, Armenia, and the Black sea, and is divided by mountains into Western and Eastern Georgia. Russian Georgia, or the province of Teflis, contains 17,688 square miles, with 300,000 inhabitants. Turkish Georgia, or Kartuli (Zemo Kartuli), belongs to the pachalic of Tchaklir and contains 5045 square miles, with 200,000 inhabitants: its capital is Akaleke. Separated from Russian Georgia is the Russian province Imirete or Imiretta, containing 13,570 square miles, with 270,000 inhabitants. This province comprises the following divisions:—Imiretta, the native country of the pheasant, with the capital Kotalis (Cotais), Mingrelia, Gurieh, with Poti at the mouth of the river Fash (Phasis), and Awchasa on the south-western declivity of the Caucasus. Mingrelia and Gurieh continue to be governed by Greek hereditary czars, tributary to Russia. The former czar of Georgia (Cachetia and Cartalina), Heraclius Timourasovitsch, acknowledged, in 1783, the sovereignty of Russia, for himself and his descendants. In 1784, the czar of Imiretta followed his example. In 1801, the emperor Paul declared himself, at the request of the czar, Georgius Iraklivitsch, sovereign of Georgia, and the emperor Alexander formally united Georgia with the empire by a proclamation of September 12 (24), 1801. The princes still living received a pension, and Teflis was made the seat of government. In the Awchasa, the Russians occupy several fortresses on the shore of the Black sea; for instance, Anapa. The inhabitants of Awchasa are Mohammedans, and independent: they pay no tribute. Christianity was introduced, in 370, from Armenia into Georgia, the only Caucasian country in which it has entirely maintained itself. The Georgian czarina, Tamar, endeavoured, in the second half of the twelfth century, to propagate Christianity among the mountaineers. The Greek religion, the predominant faith, is rigidly observed, with a number of ancient national superstitions customs. The Georgians are very tolerant towards other religions. Under the patronage of Georgia are twelve archbishops and bishops, and thirteen archimandrites. Through the centuries, the object of contest between Turkey and Persia, was plundered by both, and its inhabitants carried away as slaves. The Georgians are considered the finest race of men, after the Circassians, and Georgian women are the chief ornament of Turkish and Persian haremss. The following represents the costume of Georgian merchants:—

* The Knoxville Register contains some interesting items of information in relation to the gold regions of Georgia, gathered by persons who reside in that country. In Habersham county, on the south side of the Blue Ridge, it states that many hands are employed digging for gold, and large tonnages are annually carried. At the present time, there are 250 miners on the north side of the Blue Ridge, which is in the Cherokee nation, about 4800 hands are supposed to be employed, whose daily proceeds are estimated at $3,169. The Coker Creek mines have more recently been discovered. Here the articles of gold are very small, and from the defective machinery, which has been employed, they have not been found very profitable, though the mines are believed to be quite rich. At a few of these, where good machines for washing purposes have been employed, the miners have not been found very profitable, though the mines are believed to be quite rich. At a few of these, where good machines for washing purposes have been employed, the miners have not been found very profitable, though the mines are believed to be quite rich.
of Gaulia (Paris, 1820), has shed much light upon these countries.

GEORGIC (from the Greek γέροντας, a famous old man, to work); a rural poem; a poetical description of agricultural pursuits, applied particularly to a didactic poem of Virgil.

GEORGICON; a celebrated agricultural institution, founded by count Pestesics, of Tolna, at Kesthely in Hungary, where over 300 pupils are instructed in all the sciences relating to agriculture, and in practical agriculture itself. Natural philosophy, natural history, chemistry, the veterinary art, mathematics and surveying, architecture, book-keeping, &c., are taught here. Here is a forest academy, (Societas Forestarum) and a riding school, Gardens, fields, meadows, vineyards, forests belong to the institution, and cattle, horses, sheep, bees, and silk-worms are raised.

GEORGIIUS SIDUS. See Planets.

GEPIDE; a German tribe of the family of the Goths. According to Jornandes, this name signified indolent; they are very hardy, and from the circumstance, that when the whole nation passed from Scandinavia in three vessels, one of them sailing slower than the others, was called Gepanta, signifying in the Gothic tongue, slow. Hence the name of Gepantor or Ge- pides, which was, at first, a term of reproach. They flourished on the banks of the Vistula, made conquests in the south, and advanced to Galicia and Lodomiria, but were defeated by the Goths, whom they afterwards joined in their irritations into the Roman empire. Lands were subsequently assigned them in Thrace by Probus. Of Attila's army they formed a considerable part. After his death, they shook the yoke of his successor, became allies of the Romans, and remained, for a long time, quiet. In the year 550, a quarrel arose between them and the Lombards, and, in 570, they were defeated, with great slaughter, by these enemies, and thenceforth lived in subjection to the Lombards, the Franks, &c.

GERANIUM; a genus of plants, containing a vast number of species, many of which are cultivated on account of the elegance of their flowers. The calyx is persistent, of five leaves; the petals are five, alternate with the calyx leaves; the stamens are ten, more or less connected at the base; the style simple, terminating in a globular stigma. Species are herbaceous or suffruticos, with the younger stems articulate. Most of the cultivated species belong to the subgenus petargonium, and are natives of Southern Africa, where they are exceedingly numerous, and form a striking feature in the peculiar vegetation of that region. They are of easy cultivation, and may be raised from seed sown in the spring; but in the winter they require protection.

GERHARD, Paul, a German poet, born in Saxony, 1506 or 1507, died in 1576. He contributed largely to the great stock of German hymns. Some of his hymns are still very popular in Germany, and often quoted. He was all his life devoted to the service of his country, very pious, and attentive to his parochial duties.

GERMAIN, ST; the name of a number of places in France, among which is St Germain-en-Laye, a town in the department of Seine-et-Oise, above two leagues north from Versailles, and four leagues west-northwest from Paris, on the left bank of the Seine. It contains 11,011 inhabitants. The most remarkable building there is the royal palace, commenced by Charles V., in 1370, and embellished by several of his successors, including Henry IV. and Louis XIV. Its site is fine, and the apartments very beautiful. On August 26, 1718, at St Germain, Louis XIV., the castle was the asylum of James II. and his family. James II. died here in 1701, his daughter in 1718, and his wife in 1718. Charles IX., Henry II., and Louis XIV., were born here. The manufactures of St Germain are inconsiderable.

GERMAIN, COUNT ST; a famous adventurer and alchemist, whose name and origin are unknown. He sometimes called himself Aynar, or marquis de Bethemar, and was probably a Portuguese by birth. Comte de Crostero (q. v.), on his first journey to Germany, became acquainted with him in Holstein, and learned new arts of deception under his instructions. St Germain was versed in chemistry and other sciences; but his irresistible inclination for magic did not permit him to seek reputation in the usual paths. He spent his time in travelling about, and, by his impudence and cunning, he imposed on the credulity of the weak, and even gained access to several courts. According to his own account, he was 350 years old, and had in his album a sentence written by the celebrated Montaigne. He always had in his possession a powerful elixir, which would restore youth to the old, and which always preserved his strength. On his second voyage to India, where he pretended to have made in 1755, he succeeded, as he said, in gaining the chief-foject of all adepts, namely, the making of precious stones; and it is reported, that, in 1755, while with this object, he once suddenly broke to pieces a valuable diamond of his own manufacture, after having sold a similar one for 5500 louis d'or. Nor were the secrets of futurity hidden from his eyes. He foretold to the French the death of Louis XIV. His power extended even to brute animals; he inspired serpents with a sensibility to the charms of music. He possessed, we are told, the rare power of being able to write with both hands at the same time, on two different sheets of paper, whatever was dictated to him, so that it was impossible to distinguish the hand-writings. He played in so masterly a manner on the violin, as to produce the effect of several instruments. In short, he was neither destitute of talents nor of knowledge, and he would have become famous, if he had not preferred to become notorious. New light has been thrown on his history by the Mémoires de Mad. Duhamel.

GERMERICUS, CAESAR; a Roman general celebrated for his victories over the Germans, son of Claudius Drusus Nero, and the younger Antonia, a niece of Augustus, justly esteemed for her virtues, which her son inherited. Tiberius, his paternal uncle, adopted him. He afterwards administered the quesarship, and was made consul before the lawful age. Augustus died while Germanicus, with Tiberius, was at the head of the armies in Germany. Tiberius succeeded to the government. Germanicus was invited by several rebellious legions to assume the sovereign authority, but he refused. He then crossed the Rhine, and, surprising the Marsi in a drunken riot, made a signal slaughter, and completely destroyed the temple of Tanagra. In a similar manner he defeated, in the following year, the Catti, and, after having burnt their city of Mattiana (according to Mannert, Marburg), he victoriously returned over the Rhine. Here some deputies of Segestes appeared before him, soliciting in the name of their master, his assistance against Arminius, the son-in-law of Segestes, by whom the latter was besieged. Germanicus hastened to his rescue, delivered him, and made Thusnelda, wife of Arminius, prisoner. Arminius then prepared for war, and Germanicus collected his forces. He then, for the first time, crossed the Rhine. The Roman legions were already preceding when Germanicus renewed the attack with fresh troops, and thus happily averted the rout that threatened him. Arminius
retreated, and Germanicus was content to retain the banks of the Ems, and retire with honour from the contest. He could not, indeed, have returned. After having lost another part of his troops during his retreat, by a violent storm, which wrecked the vessels in which they were embarked, he reached the mouths of the Rhine, with a feeble remnant of his army, and employed the winter in making new preparations for war against the Romans. He had broken the vessels, in order to avoid the difficult route by land through forests and morasses, and landed at the mouth of the Ems. Proceeding thence towards the Weser, he found the Cherusci assembled on the opposite bank, with the intention of contesting the passage. Nevertheless, he effected it, and fought a battle, which began at daybreak, and terminated to the advantage of the Romans. On the succeeding day, the Germans renewed the contest with fury, and carried disorder into the ranks of the Romans, but Germanicus maintained possession of the field. The Germans returned into their forests. Germanicus re-embarked, and, after having experienced a terrible storm, by which part of his fleet was dissipated, went into winter quarters, but not until he had made another incursion into the country of the Marsi. This expedition was his last in Germany. Tiberius, jealous of the glory of the young hero, called him home under pretence of granting him a triumph. In order, he supposed, to save his reputation, Germanicus, who felt himself suddenly apprehended dangerous to him, sent him, invested with almost absolute power, into the East, to compose the disturbances which had broken out there; at the same time he appointed Piso, whose proud, domineering and inflexible character always thwarted the intentions of Germanicus, governor of Syria. It was evident that they could not long continue to act together, and Piso conceived such an inveterate hatred against Germanicus, as to make it very probable, that the latter was poisoned by him. Germanicus died in the year of Rome 772, aged thirty-four years. Rome lost in him one of her bravest and noblest citizens.

GERMAN OCEAN, or NORTH SEA; between Great Britain, Holland, Germany, Denmark, and Norway. It is about 200,000 square miles in extent. The tides are greatest on the coasts of Holland and England, where it is confined within narrower limits. The waters are saltier than those of the Baltic, but less than the North Sea, the main trunk of which contains a larger portion of unctuous matter and of marine plants, and frequently present a luminous appearance. (See Mollusca.) A description of the banks of the North Sea, founded on numerous soundings, with an illustrative chart, is contained in the fifth number of the Edinburgh Philosophical Journal. It opens into the Atlantic on the north, and communicates with the English channel by the straits of Dover, and with the Baltic by the Sleggerac (q. v.) and Cattegat. (q. v.) It may be considered as divided into two parts by the Dogger bank, which traverses it in almost all its width (87° 17' N. and 55° 40' and 56° 37' E. longitude). In general, the Sylt or Heligoland is dangerous, exposed to violent and variable winds: a strong tide, running in the direction from north to south, is much increased by northerly and north-westerly winds. The fisheries are extensive, both on the Dogger bank and the coasts of Great Britain, Holland, and Denmark; and they are more valuable at its northern extremity, in the direction of the Orkney and Shetland islands. No part of the ocean is better fitted for forming able seamen. The men, accustomed to the frequent changes and bosomaneous navigation of this sea, need not fear to encounter the hardships of the Atlantic, or the perils of the greatest maritime powers in Europe. The formation of the Zuyder Zee (q. v.), in the thirteenth century, by a great irruption, and the destruction of an island on the coast of Sleswick, in 1634, are proofs of its fanatical tenacity. Almost seven miles of land, belonging to Great Britain. The principal ports on or connected with the German ocean, are Yarmouth, London, Kingston-upon-Hull, in England; Leith and Dundee, in Scotland; Dunkirk, in France; Ostend, Flushing, Antwerp, Amsterdam and Rotterdam, in the Low Countries; Hamburg, in Germany; Christiansand and Bergen, in Norway.

GERMANTOWN; a post-town in Philadelphia county, Pennsylvania; seven miles north of Philadelphia; population, 4311. It contains a bank, an academy, and several houses of worship, for Presbyterians, for German Calvinists, for Lutheran and Friends, and for Methodists. It is pleasantly situated, and has considerable manufactures. A battle was fought here on the 4th of October, 1777, between the Americans, under general Washington, and the British. The Americans lost 200 killed, 600 wounded, and four taken prisoners; the British lost seventy killed, and 430 wounded and taken prisoners.

GERMANY; an extensive country, situated in the centre of Europe, and divided into various states of various dimensions.

Geography and Statistics.—Germany is bounded east by Western Prussia and Posen, Poland, Cracow, Galicia, Hungary, and Croatia; north by the Norwegian kingdom, and Switzerland; west by France and the kingdom of the Netherlands, and north by the North Sea, Denmark, and the Baltic. It extends from 5° 20' to 20° 20' E. lon., and from 45° to 55° N. lat., with an area of 250,000 square miles. It is watered by 500 rivers, among which sixty are navigable. The principal are the Danube, the Rhine, the Weser, the Elbe and the Oder (see those articles). The principal lakes are that of Constance, of Chiem, of Cirknitz, the Trunsee, the Wurmsee, the Dummersee, the Plänersee, &c. The country is mountainous in the south; in the north it is principally level. Germany descends towards the North sea and the Baltic from the south, and in the north-west, is constantly encroached upon by the sea. The most southern chain of German mountains is formed by the Tyrolean Alps, the Alps of Allgau, the Carnic and Julian Alps, running from east to west. The most northerly mountain chain extends east, and winding southwards it contains the Carpathian mountains, with the Sudetic chain, which gives out the Riesengebirge, between Silesia and Bohemia; to the south-west are the Moravian mountains; to the north-west, the Bohemian forest. From the latter, the Saxo Erzgebirge goes off to the north-east, the Fichtelgebirge to the north-west, and north-west of this last lies the Thuringian forest. The most northern mountains of Germany are the Harz, to the west of which, and crossing the Weser, extend the Weser mountains, forming, near Minden, the Westphalian Gates. Southwardly from this are the Sweerland mountains, the Westerwald and the Siebengebirge on the Rhine. From the Thuringian forest, to the south-east, extend the Rhone, the Vogelsberg and the Taunus, the latter of which stretches to the Rhine. From the Rhuen mountains, southwardly, run the Spessart, the Odenwald, the Schwartzwald (Black Forest, q. v.), which extends to the north, the Upper Black Forest, and to the north-east a chain of the Rough or Sublim Alps, and approaches the Alps of Allgau. Beyond the Rhine are the Donnersberg and Hunsrück, which, with part of the Ardennes, are connected with the Voges. In northern Germany, there are sandy heaths and moors, and many districts contain great morasses; the climate is cold. On the whole, the soil is fertile. The climate is temperate and healthy; in the north more wet and severe, in
Germans 27,705,755
Slavonic origin 5,520,000
Wallachians and French 1,620,000
Jews 292,500
Italians 1,680,000
Greeks and Armenians 900

In the same year, the number of persons of different religions was as follows:

<table>
<thead>
<tr>
<th>Religion</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholics</td>
<td>18,275,000</td>
</tr>
<tr>
<td>Protestants</td>
<td>15,150,000</td>
</tr>
<tr>
<td>Jews</td>
<td>292,500</td>
</tr>
</tbody>
</table>

According to a careful estimate in the Bulletin Universel, the population in 1830 is rated at 34,393,000.

The number of students in the universities (24), was in 1829, about 18,000;* Students.

* It must be remembered, that, in Catholic countries, the name student is given to all who are pursuing classical studies; but, in Protestant countries, it signifies only young men who have passed through the academic course. Hence the apparent disparity of the numbers in Vienna over those in Berlin.

The mineral kingdom produces some gold (some rivers contain gold-dust), a considerable quantity of silver (in particular, in the Erzgebirge and the Harz), 200,000 marks annually, quicksilver (in Idria and Deux-Ponts), tin (in Bohemia and Saxony), lead, copper, iron, calamine, molybden, cinnabar, bismuth, arsenic, anthimony, alum, vitriol, zinc, sulphur, saltpetre, coal, coal, marble, lime, alabaster, gypsum, asbestos, slate, smith, freestone, and place-stone, trass, jasper, chalcedony, serpentine, basalt, granite, porphyry, many kinds of precious stones, amber, ochre, the finest porcelain clay, fuller's-earth, marl, bentonite, petroleum, spring and rock salt, and various kinds of mineral waters. The principal objects of German manufactures are linen, woollens, leather, and cotton goods, laces, paper hangings, paper, glass, mirrors, porcelain, delint ware, gold, silver, iron, and steel wares, guns, and sword blades, musical and other instruments, watches and lacquered ware, wooden clock, vitriol, alum, sugar, tobacco, beer, brandy, and cordials, &c. Commerce is carried on by land and sea; internal commerce is discouraged by the many custom-house barriers between the different states. The exports are wood, grain (to the value of between one and two millions), wine, linen (formerly to the amount of about five millions) thread, iron, iron and wares, philosophical instruments, toys, porcelain, lacquered wares, quicksilver glass, looking-glasses, cutlery, particularly draught horses, succory fruits, wool, salt, minerals, Bohemian garnet, amber, smoked and salt meat, potteries, small, bees-wax, woolen and cotton goods, lace, &c.

The imports are wine, cordials, tobacco, tropical fruits, spices, sugar, coffee, tea, silk, cotton, fine woollen, cotton and silk goods, millinery, and ornaments. The principal commercial ports are, on the North sea, Hamburg, Altona, Bremen and Elbing; on the Baltic, Lubeck, Wismar, Rostock, Stralsund, Stettin; and on the Adriatic, Trieste. The commercial cities in the interior are, in North Germany, Leipsic, Brunswick, Magdeburg, Frankfort on the Oder, and Breslau; in South Germany, Frankfort on the Main, Nuremberg, Augsburg, Prague, Vienna, and Bolzano. The map of Germany, by Reynau (Berlin, 1825 et seq.), in 342 sheets, is the most complete that has been published. Vorbericht der 39 Deutschen Bundestaten (1825), Lichtenstein's Deutschland's Bundestaten (1825) and, particularly for statistics, the Genealogisch-Hist.-Statist. Almanach (published annually at Weimar), are among the best sources of information on the geographical and statistical state of Germany.

German commerce. Germany, in the more limited sense, that is, the German confederation, has a favourable natural situation for commerce. Lying in the centre of Europe, it borders on three seas, and the direction and number of its rivers naturally fit it for a commercial state of the first rank. Since the middle of the seventeenth century, however, when the Hanseatic cities, and Nuremberg and Augsburg, ceased to be the first commercial places of Europe, it has held, with the exception of the Prussian and Austrian provinces, a subordinate rank among the commercial states. This was a necessary effect of its subdivision into so many small states. At the present time, the secularization of the ecclesiastical estates, and the mediatization (q. v.) of many petty princes, has diminished the number of political divisions which formerly gave rise to incessant intestine wars; but a struggle of financial parties, and a rage for regulating commerce by political ordinances, have succeeded, and exert a more unfavourable influence on commerce than even the prohibitive system of the neighbouring states. Germany can carry on trade by land with France, Italy, Switzerland, the
Netherlands, Poland, Russia, and Hungary; by sea, with France, Spain, Portugal, Britain, the Northern states of Italy, Turkey, and America. Its trade by sea is chiefly with Britain, and is more injurious than beneficial to the country. Its great rivers, the Danube, Elbe, Weser, Rhine, Oder, &c., afford great facilities for maritime commerce. The principal of the German exports and imports are mentioned in the preceding division of this article, relating to the geography of Germany. German commerce, at present, is suffering from many causes. America supplies many of the former purchasers in the German market. France no longer wants German materials, as her own productions have increased five-fold since the revolution. Spain and Portugal are again producing for themselves. The commercial policy also of her own and foreign states, has been very injurious to German commerce. The first step was taken by the British act of navigation. Austria and Prussia followed this example. Bavaria, first among the German states of the second rank, did the same. Some other German governments have imposed restrictions on commerce, for the purpose of increasing their revenue; and this system has had the most ruinous effect. If the commerce of the German states, among themselves, should be made free, and if the restrictive system could be turned against Britain and Holland, instead of against Germany, the consequences might be thirty-four millions, and such an extent of territory, could supply her own wants. But her internal commerce is burdened with excessive customs. Situated in the midst of the manufacturing states, and those which are in want of manufactures, Germany appears fitted to be the market of Europe. At the German fairs, business to the amount of more than £5,000,000 annually, is transacted. They collect persons from all parts of Europe. Those of Frankfort and Leipzig are the most important. The bulk of foreign manufactures, which they bring into Germany, is again exported. The trade in French silks is almost exclusively in the hands of German merchants, and the commerce in British manufactures employs many hands, and increases the national revenue. The northern purchasers at the fairs also supply articles which serve as the materials of an intermediate trade with France, Switzerland, and Italy. The prospects of German commerce at present are discouraging. In this intercourse between the states of the federation, a better economy in the governments, so as to leave more capital to the trading classes, and a better system of political regulations with regard to commerce, be established.

German Empire. The German empire was formed by the dismemberment of the Frankish monarchy, by the treaty of Verdun, in 843. Otho the Great added the kingdom of Italy (961), and united the Roman imperial crown with the German empire (902), which was thenceforward called the Holy Roman empire of Germany. The Italian states were not, however, members of the German empire, but merely feudal dependencies. The public deliberations of the emperor with the imperial estates in the diets, produced the fundamental laws of the empire, which, besides immemorial customs, included, 1. the perpetual peace of the empire of 1495; 2. the golden bull (1472) of the diets; 3. the imperial elections; 4. the imperial capitulations; 5. the treaty of Passau, of 1532; or, rather, the religious peace of Augsburg, founded on that treaty; 6. the peace of Westphalia of 1648. In 1600, Maximilian I. and the estates divided Germany into the six circles of Franconia, Bavaria-Swabia, the Upper Rhine, Westphalia, and Saxony; which, in 1512, were increased to ten, by the addition of Austria and Burgundy, and the formation of two new circles out of the territories of the House of Austria. The two Saxon electors, Lusatia, Silesia, Bohemia, Moravia, and Thuringia, were not comprehended in this division. Each circle was governed by a prince, who assembled the estates, and was commander-in-chief of the forces. After the death of Charles the Fat (888), Germany became an elective monarchy. The emperors were at first elected by all the estates, spiritual and temporal, in common; but, during the interregnum (1197—1272), the arch-officers of the empire assumed the exclusive right of choice, which was confirmed by the golden bull of Charles IV. in 1356. The elector of Mentz summoned the electoral princes to the election at Frankfort on the Mainie. The electors appeared in person, or by ambassadors, but were allowed to be followed only by a small suite. All foreigners, and even foreign ambassadors, were obliged to leave the city on the day of the election. The emperor swore to observe the elective capitulation (see Capitulation), and was then proclaimed. The coronation took place at first in Aix-la-Chapelle, but afterwards at Frankfort. In case of the decease, minority, or long absence of the emperor, the elector of Saxony and the elector of the Palatinate were vicars over the greatest part of the empire; but Austria and Bavaria could not be governed by a vicar. The estates of the empire, or, as they were then called imperial estates, divided into three classes, viz., the ecclesiastical electors, the archbishops, prelates, abbots, abbesses, the grand master of the Teutonic order, and the grand master of the knights of St. John; or temporal, viz. the secular electors, dukes, princes, landgraves, margraves, burgraves, counts, and the imperial cities. After the peace of Westphalia, the estates were divided into the Protestant and the Catholic (see Corpus Catholicorum). The immediate nobility of the empire did not belong to the estates of the empire. They were divided into the Franconian, Suabian, and Rhenish circles, with courts of judicature, and had the right of sending deputies to the diet. The emperor summoned annually two regular diets (besides the extraordinary meetings), which were held at Ratisbon, and, together with the emperor, exercised all the prerogatives of sovereignty—levying taxes, making laws, declaring war, and making peace. There were three chambers: 1. the secular; 2. that of the princes; 3. that of the clergy. The secular and spiritual diets were divided into the imperial cities and the spiritual and temporal benches (the Protestant bishops of Osnabruck, and Lubeck sat on a separate bench). The counts of the empire did not vote individually, but they were divided into the Wettererian, Suabian, Franconian, and Westphalian benches, each of which had one vote. The prelates and abbots, divided into the Suabian and Rhenish benches, had, also, two collective votes. 3. The chamber of the imperial cities was divided into the Rhenish and Suabian benches. Each of the three chambers deliberated separately, but the two first then met together, and decided, de facto, on any proposition, which, when ratified by the emperor, became a decree of the empire. All the decrees of a diet were called a rescess of the empire. The declaration of war by the empire, was proposed by the emperor, and decided by a majority of votes. When mercenary troops began to be used, in the time of Sigismund (1411—1437), each state, instead of sending a certain number of soldiers, sent florins for every horseman, and four florins for every foot soldier; and these sums called Roman months (because the first expiditions had generally been to Rome, and the time of the feudal service which the vassals were bound to render on these occasions, had been limited to six weeks, which in Roman time was called a Roman month), were allowed to the emperor in all extraneous
dinary cases, particularly in the wars of the empire. A Roman month, for the whole empire, consisted of 20,500 infantry, 4,000 cavalry, which amounted to the sum of 128,000 florins. The emperor, however, might grant troops or money at pleasure. The estates had the right of distributing the taxes, or the right of subcollecture. The judicial tribunals of the empire were the imperial chamber (q. v.), and the Aulic council (q. v.), with the provincial courts of the empire and the Austrigal courts (q. v.), the successor of the Austrigal courts, in the sequel of this article.) In church matters, whether relating to Protestants or Catholics, the imperial chamber and the Aulic council were incompetent to decide. The Protestant states acted, in ecclesiastical affairs, by consistories. The Catholic states were subject to the ecclesiastical jurisdiction, in the hands of the popes and the bishops, and the rules of the canon law. By the peace of Westphalia, the right of coining money and of working mines was given to all the states of the empire; and the liberty and security of commerce and navigation in all the rivers and ports of the empire, were confirmed to all the members of the empire. Maximilian I. established the post-offices, and appointed a postmaster-general of the empire. The office continued hereditary in one family till 1747. The imperial revenues were so inconsiderable, that the emperor could not maintain the law and order of his dominions by his own forces. The emperors were therefore compelled to enter into treaties with their Catholic neighbors to support their dignity. Imperial reservations were those prerogatives which the emperors exercised throughout the empire, independently of the states. In respect to the emperor and to the empire, the lands of the estates were in part fees, and in part alodial, and were divided into ecclesiastical and secular. By the sovereignty of the states, from the peace of Westphalia, was understood their right of exercising sovereign powers within their own territories, so far as they were not restrained by the laws of the empire, or by treaties. All the electors, and some other estates of the empire, had the jus, or privilegium de non appellando, and others the privilegium electionis fori. (See Privilege.) In ecclesiastical matters, they had the right of reforming (jus reformanda), and could introduce, and tolerate in their territories, either of the three religious parties; yet they could not impose either of them upon the inhabitants of their religious party, which existed in their dominions in the normal year of 1624, and were bound to allow them the right of emigration for five years. The Protestant rulers were, in their own territories, the heads of the church, and the Catholic princes, of their Catholic church. All the Catholics were under the jurisdiction of their bishops. As consequences of their sovereignty, the members of the empire had, also, the right of making war and peace, and of concluding alliances, which, however, was limited by laws of the empire. Such were the fundamental features of a constitution, of which something may be said in favour, and much against it. It gave the Germans neither unity nor energy, and made one of the most extensive countries of Europe one of the most impotent. But this very impotence, in regard to foreign politics, and the absence of the excitement of party, in regard to questions of internal administration, led to the ardent pursuit of science. The reformation, too, could not have been successfully carried through, except in a country in which the interests of the princes were so divided. In the introduction of the reformation, Germany sacrificed herself for mankind. No one will doubt this, who has read the "Thirty years' war." (See Thirty Years' War.) The dissolution of the German empire (9th August, 1806), made way for the confederation of the Rhine (q. v.), which succeeded by the Germanic confederation. (q. v.) See also Elector. Germanic Confederation. After the German empire, which, during the 18th century, had been the mere shadow of a political body, was dissolved, in 1806, the confederation of the Rhine (q. v.), reunited many of the German states, under the protection of Napoleon, who allowed the members full sovereignty in the interior, and enlarged their territorial possessions, at the expense of the Germanic confederation. With the fall of Napoleon, the confederation of the Rhine was dismembered,—Bavaria, and the other members successively, joining the allies against their former protector,—and was succeeded by the Germanic confederation, formed June 8, 1815, according to the words of the instrument, to secure the independence and inviolability, and to preserve the internal peace of the states. Germany thus presents again the semblance of a political whole, which in reality possesses no strength, even in time of peace, as many instances show. It is only necessary to mention the fruitless decrees of the Germanic diet, respecting the arbitrary ordinances of the elector of Hesse-Cassel against the holders of the old domains, the excesses and follies of the duke of Brunswick, and the want of any general system for promoting the internal navigation of the country. In time of peace, Germany is impotent. There is only one circumstance to console the heart of a German, whose patriotism extends beyond the narrow boundaries of the part of the country in which he happens to be born—that there are now only thirty-eight members of the confederation, whilst formerly there were several hundred. This shows that some progress has been made towards the great object, for which Germany, as well as Italy, has sighed for centuries—the unity and independence of their respective countries; each of which, to use the language of the great Dante, has hitherto been di dolore ostello (the dwelling of sorrow). But, at present, the Germanic confederation can be considered only as an imperfect union, directed chiefly by the two most powerful members, Austria and Prussia, which entered into it reluctantly, withholding several of their provinces from the confederacy. It needs no prophetic eye to foresee, that the time will come, when Germany will assert that union which Britain and France ended long ago; will become united, and rest from the bloody conflicts, in which, for centuries, Germans have slain Germans, and which have wasted their wealth, checked their industry, impeded the development of public law, and extinguished in their literature that manliness which is a characteristic feature in that of a neighbouring nation, partly descended from them—conflicts most fully exhibited in that heart-rending tragedy; the thirty years' war. It may be asserted, without paradox, that union is at present more necessary for Germany than liberty; at least, give her the former, and the latter will soon follow. Peace has been for a long time, and still is, the policy of the European cabinets, that the communications of late years, caused by the indestructible spirit of growing liberty, may subside into the (so called) "legitimate" level. But, whenever the interests of any of the continental powers shall change this peace into a general war, there is little doubt that the Germanic confederation will fall to pieces as ingloriously as the German empire; and every unprejudiced German would wish that it might. The less powerful members would unite with foreigners, to be able to withstand the more powerful ones. The constitution of the confederation is as follows:—Thirty-four monarchical states, of very unequal extent, and four free cities, enter into a confederation, as equal sovereigns. They are, 1. Austria; 2. Prus-
the political, economic, and cultural development of Germany. The organization of the German confederation is as follows: 1. the independence and integrity of the states; with this is connected the right of examining the disputes between the persons of the same states, and of obliging the former to yield, if they are judged to be wrong. 2. The mutual protection of the states against each other, or the preservation of the confederation. 3. The internal tranquility of the separate states is left to the care of the respective governments; but in case of the resistance of the subjects to their government, the confederation may assist the latter. The confederation may even interfere, without being called upon by the government, if the commotions are of a dangerous tendency, or if several states are threatened by dangerous conspiracies. A central commission for political examinations is instituted at Metz, which has been engaged for a number of years in the investigation of revolutionary plots. 4. The establishment of representative constitutions in all the states belonging to the confederation. Article 13th says—All the states of the union shall have landes-ständische Verfassungen. This landes-ständische has been since explained to mean any kind of representative institutions, like that of Prussia, have been thought sufficient to answer the claims of the age. 5. The establishment of three degrees of jurisdiction. (See Courts of Appeal.) 6. Legal equality of all Christian denominations. 7. The establishment of a common civil law in Germany, the liberty of emigration, and the rights of property, in general property, and real property in every other state of the confederation. 8. The regulation of the legal relations of the mediatised princes of the old empire. (See Mediatisation.) These provisions were first settled by the fundamental act of the eighth June, 1815, and confirmed, according to a decree of the congress of Vienna, in the constitution of the federal empire, June 8, 1820. These acts are contained in the Corpus Juris Confederationis Germanicae, by Meyer (Frankfort, 1822), and in the Corpus Juris publici Germaniae Academicae, by Ad. Michaelis (Tubingen, 1825). In regard to Austria and Prussia, it must be observed, that it is only their German provinces which are considered as parts of the German confederation. Those of Austria contain about 85,000 English square miles, with a population, in 1827, of 10,655,324, and a revenue of £6,445,000. Those of Prussia contain about 71,000 square miles, with a population, in 1827, of 9,329,220, and a revenue of £5,714,935. The Danish province of Holstein contains 316 square miles, with a population in 1827, 440,900; revenue, £180,000. The duchy of Luxembourg, belonging to the king of the Netherlands, contains 2183 square miles; population in 1827, 296,500; revenue, £162,000. The court appointed to settle disputes between the members of the German confederation, is called the court of Austrigistatis, a want of a firm and vigorous administration of justice in Germany, caused principally by the weakness of the imperial authority, especially after the fall of the Hohenzollern dynasty, obliged the princes, prelates, cities, and knights, especially in southern Germany, to form many alliances for their own security; and an essential condition of these always was, that they would choose arbiters, in case of disputes, among themselves, who would either bring about a settlement, or give a legal decision. When, at last, at the recognition of the general peace (Landfriede), in 1495, a stop was put to feudal and private warfare, a general tribunal was left to the emperors, and all quarrels between the independent members of the empire, and, at the same time, the court of the imperial chamber (reichskammergericht) was founded, 2. In the confederation of the Rhine, the decision
of quarrels was committed to a general congress, which was never held. 3. In the present German confederation, this judicial power of deciding quarrels between the members of the union, has likewise been intrusted to the general assembly of the confederation, those duties heretofore performed by means of a committee, chosen from their number, and, where a legal sentence shall be necessary, are to establish a regular court. Austria and Prussia endeavoured, even at the congress of Vienna, to bring about the establishment of a permanent tribunal for these important duties, but the other states preferred a variable court. The system requires that the accused party shall propose to the accusing, three impartial members of the confedency, of which he is to choose one; and in case he neglects to do so, the choice is to be made by the general assembly. The supreme court of that member of the union which is selected must then undertake a formal investigation and decision of the quarrel, and publish a report; after which the question cannot be again thrown open, except in the case of new proofs being found. The assembly provides for the execution, by the act of the 3d August, 1820. The same procedure is to be adopted in all cases for private persons not satisfied, in consequence of the obligation to give satisfaction being a subject of dispute between several members of the confedency. Several disputes have already been decided in this manner, and others are still pending.

Germany, History of. The name Germania was given by the Romans not only to the inhospitable country, covered with forests, morasses, and fens, which is bounded by the Danube, the Rhine, the Northern Ocean, and the Vistula, but also to the region embracing Denmark, Sweden, Finland, Livonia and Prussia; all these countries, which form a third part of Europe, being inhabited by nations whose external appearance, manners, and customs, announced a common origin. The inhabitants of the beautiful regions of Italy, who had never known a rougher country, could hardly believe that any nation had deserted its native soil, to dwell in the forests of Germany, where severe cold prevailed for the greater part of the year, and where, instead of impervious forests prevented the genial rays of the sun from reaching the ground. They thought that the Germans (Heermann, i. e., War-men: see Von Hammer's account of the origin of this name in the Wiener Jahrbucher and Tizze in his Vorge- schichte), those wretches who are said by themselves after their national god, Tuent (Thuiseon), the Teutones, must have lived there from the beginning. They, therefore, called them indigenea (natives), and furnished us with accounts of their manner of life, from which we give the following extracts. We ought not to forget that our knowledge on this subject is derived from authors who wrote mostly with a view to hold a picture of manliness and virtue before the eye of a degenerate people, and, therefore, extolled many traits of the ancient Germans beyond their real worth, and, also, that the knowledge of Roman authors respecting the Germania, who are to endeavour to compose them, is so soon the observation of German captives at Rome, and the information of soldiers who had served in Germany. In order to give these accounts their real value, we have only to call to mind how incorrect the descriptions of Indians, in our novels, are considered by those persons who have had a long intercourse with the sons of the forest; and yet the character of Indians must be better known to Cooper than that of the Germans could be to Tacitus. However, the Teutonic element has become so important an ingredient in the institutions and productions of the middle ages, in politics, religion, and poetry, and, consequently, so important a basis of the institutions of the present time, founded on, or sprung from, those of the middle ages, that all the information which has been transmitted to us respecting the early Germans is of great importance.

A nation free from any foreign intermixture (say the Roman writers), as is proved by their peculiar national physiognomy, inhabits the countries beyond the Rhine, with fierce blue eyes, deep yellow hair, a robust frame and a gigantic height; insuured to cold and hunger, but not to thirst and heat, warlike, honest, faithful, industrious, and united to their friends, but towards enemies cunning and dissembling; scorned every restraint, considering independence as the most precious of all things, and, therefore, ready to give up life rather than liberty. Unacquainted with the arts of civilization, ignorant of agriculture, and of the use of metals and letters, the German lives in his forests and pastures, supported by the chase, and the produce of his herds and flocks; his life being divided between inaction, sensual pleasures, and great hardships. In time of peace, sleep, and idleness, by day and night, are the distinguishing marks of the general character. Some, who longs for war, and manly, dangerous adventures. Till these arrive, he surrenders himself with all the passion of unrestrained nature, to drinking and gaming. A beverage, prepared with little art, from wheat and barley, indemnifies him for the absence of the juice of the grape, which nature has denied him, and exhilarates his many feats. His personal liberty is not too precious to be staked on the cost of a die; and, faithful to his word, he suffers himself to be fettered, without resistance, by the lucky winner, and sold into distant slavery. The form of government in the greater part of Germany, is democratic. The German obeys general and positive laws less than the casual ascendency of birth or valour, of eloquence or superstitious reverence. On the shores of the Baltic, there are several tribes which acknowledge the authority of kings, without, however, resigning the natural rights of man. Mutual protection forming the tie which unites the Germans, the necessity of guarding the privacy, invited, impossible forests prevented the genial rays of the sun from reaching the ground. They thought that the Germans (Heermann, i. e., War-men: see Von Hammer's account of the origin of this name in the Wiener Jahrbucher and Tizze in his Vorge- schichte), those wretches who are said by themselves after their national god, Tuent (Thuiseon), the Teutones, must have lived there from the beginning. They, therefore, called them indigenea (natives), and furnished us with accounts of their manner of life, from which we give the following extracts. We ought not to forget that our knowledge on this subject is derived from authors who wrote mostly with a view to hold a picture of manliness and virtue before the eye of a degenerate people, and, therefore, extolled many traits of the ancient Germans beyond their real worth, and, also, that the knowledge of Roman authors respecting the Germania, who are to endeavour to compose them, is so soon the observation of German captives at Rome, and the information of soldiers who had served in Germany. In order to give these accounts their real value, we have only to call to mind how incorrect the descriptions of Indians, in our novels, are considered by those persons who have had a long intercourse with the sons of the forest; and yet the character of Indians must be better known to Cooper than that of the Germans could be to Tacitus. However, the Teutonic element has become so important an ingredient in the institutions and productions of the middle ages, in politics, religion, and poetry, and, consequently, so important a basis of the institutions of the present time, founded on, or sprung from, those of the middle ages, that all the information which has been transmitted to us respecting the early Germans is of great importance.
one hundred persons. Although the Romans called several German princes kings, yet these rulers had not so much as the right of punishing a freeman with death, or imprisonment, or blows. (See Prince.)

A nation to which every kind of restraint was thus odious, and which acknowledged no authority, respect no obligation, and, but those they imposed upon themselves. To leaders of approved virtue, the noblest youths voluntarily devoted their arms and services; and, as the former vied with each other in assembling the bravest companions around them, so the latter contended for the favour of their leaders. It was the duty of the leader to be the first in courage in the hour of danger, and the duty of his companions not to be inferior to him. To survive his fall was an indebted disgrace to his companions, for it was their most sacred duty to defend his person, and to heighten his glory by their own deeds.

The leader fought for victory; his companions for their leader. Valour was the grace of man; chastity the virtue of woman. The primitive nations of German origin attached something of a sacred character to the female sex. Polygamy was only permitted to the princes, as a means of extending their connexions; divorce was forbidden rather by a sense of propriety than by law. Adultery was considered an impermissible crime; and yet, very rarely, was Seduction not to be excused on any consideration. The religious notions of this nation could not but be rude and imperfect. The sun and moon, fire and earth, were their deities, whom they worshipped, with some imaginary beings, to whom they ascribed the direction of the most important circumstances of life, and whose will the priests pretended to divine by secret arts. Their temples were caverns, rendered sacred by the veneration of many generations. The ordeals, so famous in the middle ages, were considered by them as infallible in all dubious cases. Religion afforded the most powerful means for inflaming their courage. The sacred standards, preserved in the dark recesses of consecrated caverns, were raised on the field of battle, and their enemies were devoted, with dreadful imprecations, to the gods of war and thunder. The valiant, only, enjoyed the favour of the gods; a warlike life, and death in battle, were considered as the surest means of attaining the respect of the world; while the heroes, who rejoiced by the relation of their deeds, while sitting around the festal table, and quaffing beer out of large horns, or the skulls of their enemies. (See Mythology, Northern.) But the glory which the priests promised after death, was conferred by the hands on earth. They celebrated in the battle, and at the triumphal feasts, the glorious heroes of past days, the ancestors of the brave, who listened to their simple but fiery strains, and were inspired by them with contempt of death, and kindled to glorious deeds.

Such were the free and unconquered tribes which once inhabited the forests of Germany. If we inquire into their origin, we are directed to Asia, the continent of mankind, although we find but faint traces of their emigration from that part of the world in the writings of the ancient historians. Joseph von Hammer (in the work above cited) calls them a Bactro-Median stock, from the highlands of Ariana; and Mirchond, the Persian poet, says Chorasan (the limited Chawhal), in which there resided the countrymen which were assembled the learned and wise, and which, in olden times, was called Dshermania. Before the Scythians, or Sceotees, were forced back by the Massagetas to the Pontus Euxinus, the Cimmeri, a nation related to the Germans, lived in those regions which at present are called Crimea and European Tartary; and, when pushed forward by the Scythians to the Vistula, intermingled with the Teutonic tribes that lived there, and of whom we have no historical accounts. In this way, Scandinavia and Germany were peopled, and a tradition was preserved among the inhabitants of those countries, that their ancestors had formerly dwelt on the banks of the Vistula.

There were three chief branches of the Germans: on the Isthmus of Sileria, the Semnones were descended from the Semnones; the inhabitants of the Rhine, the Francionians and Hessians, from the Istavones; and the Bavarians and Austrians from the Hermiones, the differences, at least so far as they relate to language, still exist. In the south of Germany, we find only tribes of emigrants, belonging to different stocks, some of whom, afterwards uniting together, formed large states. Such southern colonists were the Quadi, Marcomanni, and their descendants, the Boarii, the Hermunduri, and their descendants, the Suevi.

The Romans first became acquainted with the Germans in the year of the city 640, when a swarm of barbarians, led by a man named Marus, appeared on the Alps, seeking new habitations, defeated the consul, Papirius Carbo, and, having united with the Etuvirini, turned their arms against the Allobroges. After having here also defeated the Romans, in two great battles, they united with the Teutones and Ambrones, broke into Transalpine Gaul, and vanquished the Romans again on the Rhine. They then spread westwardly, but, being checked in their course by the bravery of the Iberians and Belgians, turned towards Italy, into which the Teutones and Ambrones attempted to penetrate, over the western Alps, and the Cimbri and Tigrini over the northern. Marus became the deliverer of Rome; he defeated the former at Aix, in the year of the city 651 (102 B.C.), and the Cimbri in the following year. Those who escaped spread themselves over Gaul, or returned to the Danube. Caesar, having subjected Gaul, and carried his victorious arms as far as the Rhine, first became acquainted with a nation called Germans. Ario-vites, they were called in the world, as other nations and tribes that lived on the Rhine, which are called, north and south of the Danube, formed the design of settling in Gaul, but was defeated by Caesar, and compelled to retreat over the Rhine. The Bricocii and Nemetes, who had belonged to that collection of tribes, alone remained on the western bank of the Rhine. Of the fugitives who returned over the Rhine, the nation of the Marcomanni seems to have been formed. Caesar crossed the Rhine twice; not with the view of making conquests in that wilderness, but to secure Gaul against the destructive irruptions of the barbarians. He even enlisted Germans in his army, first against the Gauls, then against Pompey. He obtained an accurate knowledge of the tribes that lived to the north of the Rhine, as the Ubii, Sygambri, Usipetes, and Tencteri. The rest of Germany, he was told, was inhabited by the Suevi, who were divided into 100 districts (Gauzen), each of which annually sent 1000 men in quest of booty. They lived more by hunting and pasture than by agriculture, held the land as common property, and met the approach of foreign nations by devastating their borders. This account is true, if it is applied to the Germans in general, and if by the 100 districts are understood different tribes. The civil wars diverted the attention of the Romans from Germany. The confederacy of the Sygambri made incursions into Germany with impunity; and Agrippa transferred the Ubii, who were hard pressed by them, to the west side of the
Rhine. But the Syracambri, having defeated Lollius, the legate of Augustus, the following year (A. U. C. 758), he embarked himself upon the Rhine, erected fortifications along the bank of this river, to oppose the progress of the enemy, and gave him his step-son, Drusus (q. v.), the chief command against them. This great general was victorious in several expeditions, and advanced as far as the Elbe. He died in the year of Rome 745. Tiberius, the son of Drusus, A. D. 21, fell in the winter camp on the Rhine during two years, and exercised more cunning than force against the Germans. He induced them to enter the Roman service. The body guard of Augustus was composed of Germans, and the Cheruscan Arminius (q. v.) was raised to the dignity of knight. From 740 to 755, different Roman generals commanded in those regions. Tiberius, having received the chief command a second time (A. U. C. 756), advanced to the Elbe; and the Romans would probably have succeeded in making Germany a Roman province, but for the imprudence of his successor, Quietus Varus, by which all the advantages, that had been previously gained, were lost. He violated the peace measures for changing the manners and customs of the Germans, produced a general conspiracy, headed by the Cheruscan Arminius, who had received his education in Rome. Decoyed, with three legions, into the forest of Teutoburg, Varus was attacked and destroyed. The Marcomanni, who were saved by the legate Aspres, who was stationed, with three legions, in the vicinity of Cologne. The consequence of this victory, gained by the Germans A. D. 9, was the loss of all the Roman possessions beyond the Rhine; the fortress of Aliso, built by Drusus, was destroyed. The Cherusci then became the principal nation of Germany. Four years after, the Romans, under the command of Germanicus (q. v.), made a new expedition against the Germans; but, notwithstanding the valour and military skill of the young hero, he did not succeed in re-establishing the Roman dominion. The Romans then renounced the project of subjugating the Germans, whose invasions they easily repulsed, and against any serious attacks from whom they were secured by the internal dissensions which had arisen in Germany. Maroboduus, who had been educated at the court of Augustus, had united, partly by persuasion, and partly by force, a league of Germans (A. D. 21), under his name, which is known under the name of the Marcomannic confederacy. At the head of this powerful league, he attacked the great kingdom of the Boii, in the southern part of Bohemia and Franconia, conquered it, and founded a formidable state, whose authority extended over the Marcomanni, the Hermunduri, Quadi, Marcomanni, and Semones, and which was able to send 70,000 fighting men into the field. Augustus had ordered Tiberius, with twelve legions, to attack Maroboduus, and destroy his power; but a general rebellion in Dalmatia obliged him to conclude a disadvantageous peace. The disasters which afterwards befell the Romans against Rome, prevented them from renewing their attempts against the Marcomanni, who ventured to make frequent invasions into the southern parts of Germany. Two powerful nations, therefore, now existed in Germany, the Marcomanni and the Cherusci, who, however, soon became enemies in disputes. On the one hand, the Longobardi and Semnones, disregarded the pretensions of Maroboduus, deserted his confederacy, and joined the Cherusci; and on the other, Lugiuomerus, the uncle of Arminius, having become jealous of his nephew, went over to Maroboduus. After the war between the two rivals had been carried on for a considerable time, in which Arminius and Maroboduus had learned in the school of the Romans, the victory at last remained with the Cherusci. Tiberius, instead of assisting Maroboduus, who had solicited his help, instigated Catualdus, king of the Goths, to fall upon him and force him to leave his country, and to seek refuge with the Romans. Catualdus, however, soon experienced the same fate from the Hermunduri, who now appear as the principal tribe among the Marcomanni. The Cherusci, after the loss of their great leader, Arminius, in the year of Rome 755, were compelled to submit to the German nations. Weakened by internal dissensions, they finally received a king from Rome, by the name of Iulianus, who was the last descendant of Arminius. During his reign, they quarrelled with their confederates, the Longobardi, and sank to an insignificant tribe on the south side of the Harzian forest. On the other hand, the Catti, who lived in the western part of Germany, rose into importance. The Frisians rebelled, on account of a tribute imposed on them by the Romans, and were with difficulty overpowered; while the Catti, on the Upper Rhine, made repeated assaults upon the Roman fortresses on the opposite bank. Their power, however, was by no means extinguished, as the Hermunduri and Catualdus, having settled on the north of the Danube, between the rivers Grun and Morava, had founded, under Vannius, whom they had received as king from the Romans, a new kingdom, which began to become oppressive to the neighbouring tribes. Although Vannius had entered into an alliance with the Germandic Bavarii, he was overpowered by the united arms of the Hermunduri, Lygi and western Quadi (A. D. 50), and was compelled to fly for refuge to the Romans. His son-in-law, Sidon, was now at the head of the government. He was a friend of the Romans, and rendered important services to Vespasian. In the west, the power of the Romans was shaken by the Batavi, so that they maintained themselves with the greatest difficulty. A war now broke out, that was terminated only with the downfall of Rome. The Suevi, being attacked by the Lygi, asked for assistance from Domitian, who sent them 50,000 infantry and 10,000 horsemen. The Suevi, having been defeated by the Lygi, entered into an alliance with the Jassyi, in Dacia, they threatened Pannonia. Domitian was defeated. Nerva checked them, and Trajan gained a complete victory over them. But, from the time of Antoninus, the philosopher, the flames of war continued to blaze in those regions. The Roman empire was perpetually harassed, on two sides by the barbarians, on one side by a number of small tribes, who, pressed by the Goths, were forced to invade Dacia, in quest of new habitations. The southern regions were assigned to them to pacify them. But a war of more moment was carried on by the Romans against Rome, which was composed of the Marcomanni, the Hermunduri and Quadi, which is commonly called the Marcomannic war. Marcus Aurelius fought against them to the end of his life, and Commodus bought a peace (A. D. 180). Mean- time the Catti devastated Gaul and Rhinia, the Cherusci forced the Longobardi back to the Elbe, and now appeared on the river Saale. In the year of Rome 220, new barbarians appeared in Dacia, the Visigoths, Gepidae and Heruli, and waged war against the Romans. At the same time, in the reign of Caracalla, a new confederacy appeared in the southern part of Germany—the Alamanni, consisting of Istrosabo- Hands and Sarmatian tribes. This Alamanian confederacy, against which the Romans, in the western part of Germany, rose into importance. The Frisians rebelled, on account of a tribute imposed on them by the Romans, and were with difficulty overpowered; while the Catti, on the Upper Rhine, made repeated assaults upon the Roman fortresses on the opposite bank. Their power, however, was by no means extinguished, as the Hermunduri and Catualdus, having settled on the north of the Danube, between the rivers Grun and Morava, had founded, under Vannius, whom they had received as king from the Romans, a new kingdom, which began to become oppressive to the neighbouring tribes. Although Vannius had entered into an alliance with the Germandic Bavarii, he was overpowered by the united arms of the Hermunduri, Lygi and western Quadi (A. 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from Juthausen to Oelhagen. But the power of the Saxons was not long left unchallenged, partly by the incessant struggle against the barbarians, partly by internal agitations. At the time when the Roman power had been weakened by civil wars, in the frequent military revolutions during the government of the emperors, the Franks forced their way as far as Spain, and, in the reign of the emperor Probus, they also conquered the island of the Batavi. Thus the Franks and Alemanni were now the most powerful German nations. Under Julian, the former lost the island of the Batavi, which was conquered by the Saxons, and the latter were humbled by the armies of Rome. But this was Rome’s last victory. In the beginning of the fifth century, barbarians assailed the Roman empire on all sides. The Vandals, Suevi, and Alans occupied Gaul and Spain; the Burgundians followed them to Gaul, the Visigoths to Italy and Spain; the Burgundians were followed by the Franks, the Visigoths by the Ostrogoths, and these by the Longobards (Lombards). Thus began those migrations of the innumerable hosts, that spread themselves, from the North and East, over all Europe, subduing every thing in their course. This event is called the great migration of the nations.

The principal consequences of the general irruption of the barbarians were, the destruction of the western part of the Germanic kingdom, which, under his own king, Italy, the conquest of Gaul by the Franks, and the establishment of an empire which was to give to Germany itself, where the Saxons, the Frisians, Thuringians, and Alemanni remained, a political constitution under a single head. Clovis, first king of France, professed the Christian religion (496), and with him commenced the series of the Merovingian kings, the last of whom was removed to a monastery (752). The Carolingians ascended the throne of France, and the conflicts with the neighbouring Germans, not incorporated with the Frankish kingdom, among whom the Saxons were the most dangerous enemies, became more violent. Charlemagne (768–814) resolved to put an end to the conflict, by forcing the rude Saxons to embrace Christianity, and uniting them, in a political whole, under his sceptre; but he met with an unexpected resistance for thirty years. Witikind the Great, duke of the Saxons, with great sagacity, submitted to spare the blood of his subjects, which Charlemagne had shed in torrents, consented to be baptized, with his army. Thus the great Frankish monarchy, comprehending Gaul, Italy, and Germany to the North sea, was founded. It is, however, erroneous to suppose, that, in this long war, the whole nation engaged in the repeated insurrections against Charlemagne. The Saxons, on the left bank of the Weser, submitted after the first victory of Charlemagne, and did not revolt afterwards; but the officers and priests of Charlemagne (q. v.) governed with so much severity, that many of them removed to the right bank of the Weser, and from thence trickled down to the Franks and their own countrymen, who remained behind. After many alternations of defeat and victory, the right bank of the Weser was also obliged to acknowledge the sway of Charlemagne; but priests and nobles, who retired before the conqueror, from the right bank of the Weser, gathered in strength. By two principal plans, first in planting several thousands of the most turbulent families from beyond the Elbe into Picardy, and by granting others the vacant lands on the river, Charlemagne finally succeeded in obliging them to abandon their savage manners, permitted them to govern themselves, and thus restored the power of France. Germany became an independent kingdom, when the sons of Charlemagne divided the empire. The treaty of Verdun declared Louis (the German) the first king of Germany (843–576). At this period, the Rhine formed the limit of Germany on one side (Spire, Worms, and Mentz), and the left bank of the Rhine, with their territories, were, however, included; not, indeed, on account of their inhabitants, but for their vineyards, of which the eastern kingdom would otherwise have been destitute; the other boundaries were nearly the same as at present. The constitution of the country, which was of Frankish origin, remained. Under the reign of Louis, margraves were appointed, and castles built as securities against the invasions of the Normans and Schelovani, particularly the Wenden. He enlarged his dominions by the annexation of Cologne, Treves, Aix-la-Chapelle, Trebius (Trient), and several places on the left bank of the Rhine, from the hereditary possessions of his nephew Lothaire II. Louis died 876, and his three sons, Carloman, Louis the Younger, and Charles the Fat, divided his dominions among themselves. From 884, Germany and France were again under the same sovereign, Charles the Fat, who nearly restored the limits of the kingdom of his grandfather; but the spirit of Charlemagne, which alone had been able to hold together the heterogeneous mass, had long since fled, and Charles the Fat sank so low in the estimation of the nation, that the Germans declared the crown forfeited (887) to their emperor, who married a daughter of Atha, a natural son of Carlloman, to the new throne. After several severe struggles with the Schelovani in Moravia, against whom he called to his aid the Hungarians (who, in 889, had seated themselves at the foot of the Carpathian mountains), he acquired the imperial crown (896) by the defeat of Berengarius, duke of Friuli. In 899, Arnold died, and Louis the Infant, his son, was made king, at the age of six years, by whose death, in 911, the Carlingian race became extinct in Germany. With Henry the Fowler commenced the line of Saxon emperors, distinguished for warlike vigour, for their victories over the Hungarians, and for the foundation of cities in Germany. Otho the Illustrious, duke of Saxony, having declined the royal dignity, on account of his great age, Conrad I., duke of Franconia, was elected king of Germany by his influence; and, from this time, Germany remained an elective monarchy, till the dissolution of the empire. Considering the dissensions to spare the blood of his subjects, which Charlemagne had shed in torrents, consented to be baptized, with his army. Thus the great Frankish monarchy, comprehending Gaul, Italy, and Germany to the North sea, was founded. 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security against violence and plunder, by land and sea, associations for self-defence were formed. Thus, during the reign of the emperor Frederic I. Barbarossa (1152—90), the cities on the Rhine, the North sea, and the Baltic, formed the Hanseatic league, for the mutual protection of their commerce. Under the empire of Frederick II. (1218—50), poetry and the first germs of literature began to flourish. The peace of the empire, which forbade all private warfare, unless after a previous declaration of three days, contributed to restore public security. The assemblies of the estates of the empire were thereafter, by the decree of its tenant, held up by the pope's interference, which was limited, of the council of Constance (see Council, and Conciliar), by which Huss was condemned; and the war of the Hussites followed in Bohemia, Misnia, Franconia, and Bavaria. Albert II. of Austria (1437—39) died too soon for the execution of his projects for the re-

stitution of order. The reign of Frederic III. was remarkable by the peaceful growth of the several universities, and by the enterprise and activity excited by the discovery of America, which aroused all Europe. Feudal warfare and the tyran-
novy of the nobles still oppressed the country, as is shown in the confederation of the Swabian cities. Maximilian I. (1493—1519), an active and enterpris-
ing prince, established the perpetual peace of the empire, introduced a chamber of justice, and other institutions, and divided Germany first into six, and afterwards into ten, circles. He took the title of Roman Emperor, and even intended to ascend the papal throne, but was anticipated by the cardinals. He also established the post-doctoral faculty in 1507, and the commencement of the reformation (1517) at the uni-

verity of Wittenberg closes his important reign.

To his successor and grandson, Charles V., king of Spain, an elective capitulation was proposed, to which he was required to swear, but which he viola-
ted in almost every measure of his reign. The refor-
mation begun by Luther made rapid progress; the peasants' war, under Thomas of Munster, spread de-
solution; the union of the landgrave Philip of Hesse and the elector of Saxony, in favour of the reformation; the solemn protest of the adherents of the new doctrine (1529), and the Smalcaldic league of the Protestant princes (1530), preceded the Smalcaldic war (1546). After the deposition of the elector John Frederic of Saxony, and the interim (q. v.) of 1548, the elector Maurice allied himself with France and with the Smalcaldic league. Charles V. was obliged, by the treaty of Passau (1552), to grant the Protestants the liberty of conscience, their civil rights with the Catholics, which were princi-

pally confirmed by the religious peace of Augsburg (1555). Charles confirmed the administration of the empire, and renewed the laws for the preservation of the peace of the empire and of the chamber of jus-
tice. In 1556, he abdicated the government, and Philip II. (1527) in a Spanish monastery. The succe-
sion of Ferdinand I., brother of Charles, the religious peace was included in the elective capitulation (see Capitulation), and the council of Trent (begun in 1545) was concluded which rendered the separation of the 
Protestants and the Catholic church permanent. Under his successor, Maximilian II. (1564—76), the divisions among the Protestants themselves, the con-

roversies between Melancthon and Calvin, and the separation of the Calvinists from the Luthers, by the formula Concordia, took place, and, in the reign of his son, Rodolphi II., the thirty years' war was prepared by the Holy father of the Calvinists to the league. Under Matthias (1618), the two parties took up arms. The fanaticism of Ferdinand (1619—

37) kindled the spark into a flame. The thirty years' war began with all its terrors. 

Notwithstanding the bloody resistance of the union, Tilly and Wallenstein reduced the greater part of the empire to submission by applying entire effect to the elections of emperor, and abolished private warfare. Learning and freedom of opinion received a new impulse in Germany; the university of Prague was founded, in which the disciples of Wicken-
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embrace the Catholic religion or to emigrate, was already put in force in several places; and Frederick thought he had attained his aim when Gustavus Adolphus of Sweden, in pursuance of the plan of conquering Hanover, invaded the country. After his death, France opposed Austria; the great elector, Frederic William of Brandenburg, declared (1640) for the Protestants; Bannier and Torstenson, Wrangel, and Turenne, distinguished themselves on the same side, until, after thirty dreadful years, the peace of Westphalia restored rest to disturbed Europe (1648). This was during the reign of Ferdinand I. (1637—57). Entire equality of sects, liberty of conscience, the free exercise of all religions, except in the Austrian domains, and the independence of Switzerland and the Netherlands, were acknowledged by this peace. Among the important consequences of this peace, which settled the constitution of Germany more definitely, was also the restriction of the Hunscentic league to Hamburgh, Bremen, and Lubeck, the maintenance of standing armies, and a more regular system of taxation. Under Leopold I., who ascended the imperial throne in 1657, the diet became permanent from 1665. This emperor concluded the Treaty of Breda (1667), by which the sovereignty of Austria was declared, and the Seven Years' War (1667—78) terminated by the peace of Münster and Osnabruce (1648), with Turkey and France. He died before the end of the Spanish war of succession. The eighth electorate had been established by the peace of Westphalia, for the Bavarian house; the duke of Hanover was now made the ninth elector. Prussia, in the mean time, had raised herself to the rank of a kingdom, and obtained a new independence in the peace of Utrecht. Under Joseph I. (1705—11), the Spanish war was continued; under Charles VI., the peace of Utrecht, and that of Rastadt (1714) put an end to the project of uniting the Spanish with the German crown, and the succession in the house of Austria was settled by the Pragmatic sanction. The peace of Vienna terminated the war produced by the Polish election in favour of Saxony, and the peace of Belgrade (1739) concluded the war with Turkey, by which Austria was obliged to make some cessions. With the death of Charles VI. (1740), the male line of the Hapsburg dynasty became extinct, and his daughter, Maria Theresa, assumed the government of the hereditary Austrian dominions. But the elector, Charles Albert of Bavaria, came forward with claims on the Austrian hereditary dominions, and in (1742) as German emperor, under the title of Charles VII. The eight years' war of the Austrian succession was terminated by the peace of Aix-la-Chapelle, (1748), by which Maria Theresa, who, in the mean while, had carried on two wars against Frederic II., the Great. September 15, 1745, her husband, Francis I., was elected German emperor. The seven years' war, so ruinous for Germany, was terminated by the peace of Hubersburg (1763). Joseph II., the distinguished son of Francis I., succeeded his father in the imperial dignity (1765). His first labour was a reform of the administration of justice and of the chamber of justice; this was followed by the abolition of the order of the Jesuits in his states (1773), after the example of other European powers, by the abolition of the superfluous monasteries, the edict of toleration of 1781, and a greater liberty of the press. The troubles in Belgium, and the renewal of hostilities with Turkey, disturbed the end of his reign, and he died 1790, with many tears for the fate of his benevolent and liberal plans. Frederick II. concluded peace with the Sublime Porte through the mediation of Prussia. The French revolution broke out, and Leopold and Frederic William of Prussia formed an alliance at Pilnitz (1791), for maintaining the constitution of Germany and the royal dignity in France. This alliance became of the greatest historical importance; it was the cause of a great part of the excesses in France, the reaction of which on Germany is well known. Frederick II., (1740—1786), the great grandson of Joseph II., continued the alliance with Prussia. After the national assembly had declared war against Austria, the German empire, in return, declared war against France; but Prussia and several German princes made separate treaties with the new republic, and the peace of Campo-Formio (q. v.) was signed between Austria and France (1797). The grand coalition for a peace with the German empire were in train at Rastadt, but, before their conclusion, the war broke out anew. The peace of Luneville (q. v.), in 1801, made the Rhine the boundary between France and Germany; the latter thus lost more than 20,000 square miles of territory, and nearly 4,000,000 inhabitants. The Austrian monarch founded the hereditary empire of Austria (1804), and the first consul of France (Bonaparte) was declared emperor of the French, under the title of Napoleon I. Austria and Russia soon after united against Napoleon, and the peace of Presburg (Dec. 26, 1805) terminated the war, in which the allies engaged with Turkey, Bavaria, Wurttemberg, and Baden, had taken part as allies of France. In the following year, sixteen German princes renounced their connexion with the German empire, and entered into a union at Paris (1806), under the name of the confederation of the Rhine, which acknowledged the emperor of France as its protector. This decisive step was followed by a second. The German empire was dissolved; the emperor Francis resigned the German crown, and declared his German hereditary dominions separated from the German empire. With this begins the history of the confederation of the Rhine. See Confederation of the Rhine. 

Germany from 1806 to 1815. The first year of the existence of the confederation had not elapsed, when its armies, united with those of France, were marched to the Saale, the Elbe, and the Oder, against the Prussians, and afterwards to the Vistula, against the Russians. After the peace of Tilsit (q. v.), the confederation, only under the name of France, was united with the eleven princely houses of Northern Germany. The Kingdom of Westphalia was established, and Jerome, the brother of Napoleon, put upon the throne. Four Kings, five grand dukes, and twenty-five dukes and other princes were united in the new confederation. The peace of Freiburg (1807) confirmed the former state and power. The north-western parts, however, and the Hanseatic cities, Bremen, Hamburg, and Lubeck, were united with France in 1810. In 1812, Napoleon undertook his fatal expedition to Russia, and the contingents of the Rhenish confederation joined his army. About 100,000 Germans found their graves in the snows of Russia. The Russians pursued their advantages to the frontiers of Germany. Prussia, wearied with her long sufferings, joined them with enthusiasm (Kalisch, Feb. 28, 1813); and, at the same time, some of the states of the north of Germany united with them. Lubeck and Hamburg rose against the French, and all Germany was animated with the cheering hope of liberation. August 10, Austria joined the alliance against Napoleon. The war, owing to the enthusiasm of the people, soon assumed a most favourable appearance for the allies, and, Oct. 8, 1813, Bavaria joined the allied arms. Ten days afterwards, the battle of Lépize destroyed the French domination, the Battle of Dresden, the Battle of Leipzig, and dissolved the confederation of the Rhine. November 2, the king of Wurttemberg, and the other princes of the south, joined the great alliance. After the battle of Hanau, October 30, the French army had retreated over the
GERMANY. (LANGUAGE)

Rhine. With the exception of some fortresses, the French power was everywhere annihilated in Germany. Neither the kingdom of Westphalia nor the grand duchy of Berg any longer existed. Throughout Germany, immense preparations were made for the preservation of the recovered independences. Henceforth in Germany, not the people and the princes, increased by the promises made by the princes, of conferring liberal constitutions on their subjects. The victorious armies passed the Rhine on the first days of the following year, and all the territory which the French had conquered from Germany since 1793 was regained and secured by the end of 1814. France had to evacuate the country. Peace was concluded at Paris, May 30. France restored all her acquisitions, with the exception of Montbéliard and some smaller districts; but the circle of Burgundy, with Liege, was annexed to the new kingdom of the Netherlands. It was stipulated, by the articles of this peace, that the German states should be independent, but connected together by a federative system. This provision of the treaty was carried into effect by the congress of Vienna, Nov. 1, 1814, and by the statutes of the Germanic confederation, June 8, 1815. The German empire was not revived, but was superseded by the German confederation, which afforded the opportunity of a new and more equal and successful state. The return of Napoleon kindled a new war, the results of which were unexpectedly rapid and fortunate for the allies. The treaty of November 20, 1815, restored to Germany, besides Montbéliard and some territories in Lorraine, all the former possessions which had remained in the hands of France, with the addition of Landau and the territory appertaining to it. Nov. 5, 1816, the diet of the new Germanic confederation was opened. (See German Confederation, German Empire, and Russian-German War, 1812—15.) Since that time, the German confederation has done little but prosecute liberal ideas (see Congress), adopt, in the diet, resolutions which have never been executed, and organize an army of the confederacy, which, from its very organization, would be little worthy of reliance. May Germany soon work out her own freedom and union, and may she escape all unnecessary suffering in the struggle through which she must pass to attain them; for bitter enough has been the cup of the unhappy country, always the theatre of foreign aggression, domestic convulsion, and political oppression.

German Language; a branch of the old Teutonic language, which the German tribes carried with them over the greater part of Europe. In France, it was lost in the middle ages. But in Rome and in the languages, from which sprang the modern French. In Spain, it left but few traces. In England, it united with the Latin and French to form the present English. Its modifications, not more dissimilar to each other than different dialects, have remained written and spoken languages in Sweden, Norway, the Netherlands, in Germany Proper, and in the greater part of Switzerland. The Germans call their language Teutsche, or Deutsche, from the Teutones, or from their ancestor, Teut. The word is sometimes derived from the word Thueit, or Deut (from which comes the modern diät), signifying people. Its origin has been a subject of much learned discussion. A number of very ancient words in the Sanscrit, Persian, and other kindred tongues, have convinced some that it is derived from the Indian and old Persian languages, or of the same origin with them. Others, on account of the resemblance of its words and forms, have derived it from the Greek, or even from the Greek of the elder German. Accord-

* Consult Pospel's Geschichte der Deutschen, continued by Politz (Leipsic, 1819, 4 vols.); Schulte's Geschichte der Deutschen, continued by Milliblæer and Drosch; Heinrich's Deutsche Reichsgeschichte (Leipsic, 1899, 9 vols.).

ing to ancient tradition, the early Grecians received their civilization, with the worship of Bacchus and the muses, from the northern Thrace; and history mentions, in Thrace or Scythia, a Teutonic tribe of Goths on the Black sea, who, although they had been separated more than a thousand years from their native soil, had preserved, in the smaller districts, some of the remnants of their language, in the forms of their language, to the Greek. This, at least, seems certain, that, in accordance with the traditions of the nations who spoke it, it was of Asiatic origin, and was brought by those nations to Europe. The changes of the language can be historically traced no farther back than the middle of the fourth century, when Uphil introduced the art of writing it, and made a translation of the Gospels. The language of this version is a mixture of High German and Low German with some foreign, perhaps Thracian, words, and does not essentially differ from most of the present German dialects in its grammatical forms. It has, also, a dual number, like the Greek. The first of the following lines is a specimen of it. The second is from Luther's translation of the Bible, Matthew, c. 26. Mit athiso opeoanaio thele to kán na tha to wapnén. Mit (ócheo) Eúxómen, dás téch othre, othre to Mán. With (an) oath swearing, that I know not that man.

Charlemagne began a German grammar, and made great efforts for improving the language, and promoting the progress of poetry and literature. A comparison between the language of this time and the present, may be given in a few words:—Kneippl (Geschichte, writing); Keschrit (Schrift, something written); Song, Scof (Schaf, sheep); erkipit (ergibt, renders); chalón (hatten, to hold); Unachsichta (Unbeschändig, unchristly); aikau (eigen, own); pisaunowohe (beschauen, to view); scunanto (schauen, looking); Fien (Feuer, fire). After the death of the declension:—Singular, Weg, Weges, Weg, Weg; plural, nom. Weg, gen. Weg, dat. Wegum and Wegon, acc. Weg. The verbs present similar modifications; the formation of the preterite, by means of the auxiliary habes, was then entirely unknown. This Franconian dialect gave way to the Allemanic or Saxonian, which was cultivated particularly under the emperors of the family of Hohenstaufen. A great number of full sounding vowels give the language of the Minnesinger a certain melody. It has many expletives, particles, prefixes, ellipses; it readily forms derivatives and diminutives and compound words. The greatest modification in the celebrated epic poem, the Niebelungenlied (q. v.), is simple and highly finished. The use of the particles, and the liberty of varying the position of the adjective, contribute much to the ease and beauty of the diction. The High German (which had, however, been previously formed as a written language, equally distant from the Low and from the Upper German), as it is used at the present day, with some slight modifications in the forms of the verbs and in the orthography, became the general written language of Germany, through Luther's translation of the Bible. In the sixteenth and the beginning of the seventeenth centuries, it was mixed with many foreign words, particularly French, which, how-

ever, on account of the characteristic peculiarities of the German, could not coalesce with its roots and forms. Hence it was not difficult, even at the time in which Frederic the Great, and the German courts and the commercial classes, took pleasure to continue their literature for their native language, for Lessing, Gottheschel and others, by their exception, to purify it from its foreign additions. The German language of the present exists under the following forms; on the northern coast, through a great part of Lower Saxony and Westphalia, the German is spoken among the lower classes, and
several works of an early date, prove its adaptation to the purposes of a written language. This dialect is smooth. The vowels are full, and the consonants pronounced softly. It has less accent than melody. Through the greater part of Lower and Upper Saxony, Hanover, and Prussia, and the Russian provinces of Esthonia and Courland, the dialect approaches more to the forms of the written language than in other places. Through Hesse, along the Maine, in Central Germany and in Franconia, the Franconian dialect prevails (with short vowels, sharp, hissing consonants, and an easy and quick pronunciation.) In Slesvig, a great part of Bavaria, Alsatia, and the district of Swinemünde in Pomerania, the Alemannic dialect prevails, with broad but soft vowels and diphthongs, characterized, besides, in the mountainous regions, and along the Upper Rhine, by strongly aspirated gutturals. The pronunciation is mostly slow. It has much melody and accent. In many places, it differs but little from the language of the Minnesingers, and of the Nibelungenlied; yet it is deprived of one of its former chief beauties, of the participle and the simple preterite and imperfect, which are now always supplied by the auxiliaries seyn and haben. In the eastern part of Bavaria, in the Tyrol, Austria, the German part of Bohemia, the dialect in between is a mixture of Bavarian and Southian. This dialect is distinguished by frequent diminutives in l. Besides these, there are many transitions and mixtures, as, for instance, the idiom of the Riesengebirge in Silesia, rougher and broader; that of the Erzgebirge and of Thuringia, distinguished equally by harsher and deeper sounds. The language of conversation, among the cultivated classes throughout Germany, and the language of public speakers, is the written High German, pronounced the purest in some parts of Hanover, by the Courlandish nobility, and in some parts of Prussia, yet everywhere more or less affected by provincialisms. The German language in general is distinguished by its richness in words, far exceeding that of any other European language; and it is capable of being continually developed from its own substance. As an original language, it has its accents on the radical syllables. Hence the additional accents in combinations can be changed with ease, according to the sense. There be either the chief word, or separated in the construction, which imparts to the language a great pliability of construction, which is still increased by the number of syllables of inflexion and derivation. It is thus particularly fitted for a concise, scientific style, in which it is of importance to give a series of ideas, which belong together, in the same period, and in logical order; though, by this very quality, the German prose writers are often seduced to swell and prolong their periods to a tiring and confounding extent. The richness of words, and the life and capacity for variations, in the language, have prevented the origin of fixed phrases, in which the same words are exclusively used for the same notions. For this reason, the language of conversation is not so easily to be learned, and not to be used with so great precision, as the French, for instance; but the writer retains, in a higher degree, the power of using the words in such a way as to show and impress the fundamental idea. It is this faculty of entering into the spirit of every foreign language, that easily explained. The Germans have translations of Sinksphere and Calderon, of Ariosto and Tasso, of Plato's Dialogues, of Homer and Virgil, in which the spirit of the original is faithfully rendered in the rhythm and metre of the original. The very plays upon words are preserved, or analogous ones substituted. Foreigners often consider the language harsh. Mela declares that Roman lips could hardly pronounce it, and Nazarius asserts that the hearing of it excited a shudder. It is true that the aspired consonants and rough vowels, which prevail in the German mountain districts, do, indeed, strike the ear harshly; and, in general, the accumulation of the consonants seems incompatible with a soft and harmonious utterance; but that this is not observed in the case is shown in the pronunciation of the High German by the higher classes, and of some provincial dialects, as in the Polish and other languages. The long and pure vowels of the language, and their capability of being lengthened and shortened, as time and rhythm require, make it well adapted for music. There is no dictionary which comprehends the whole verbal treasure of the language, comprising, also, provincialisms. Excellent foundations are laid for such a work in the dictionaries of Adelung, Campe, Fulda, Kinderling, Voigtel, Stosch, Eberhard, Hein- sius, &c. The best modern grammars are those of Adelung, Heynatz, Moritz, Roth, Hanerkoeh, Reinbeck, Herczeg, Voigtel, Politz, and a German prosody has been very ably treated by Voss. Zeit- messung der Deutschen Sprache. The following German-English dictionaries may be recommended to students:—Eber's, in 5 vols.; Svo; Kuttner and Nicholson's, also in five vols. Svo; Bailey and Falkenkruger's (new edition by Wagner), 2 vols. Svo; Eck's Erdkunde; Burckhard's Pocket Diction- ary, 1 vol.; Rabebrust's, 1 vol. Of grammars, that of Doctor Folien is superior, in practical usefulness, to those of Nohen and Rowbotham.

German Literature and Science. It has been questioned, even by Germans, whether there is a German literature. If we consider national literature as the expression of the character of a nation, contained in a series of original works, which bear a common stamp of nationality, we shall not hesitate to call the body of German works a national literature. We may, perhaps, say that it is not yet complete; but the editors closely work and developing itself further. We shall see in it parts of a more comprehensive whole, than the spirit and taste of a court or of an academy can give. If we find it deficient in finish, yet we shall see that it is penetrated with a love for liberty and independence of thought, an impartial zeal for the truth, and a sub- ordination of art to nature. (Of German poetry, see shall treat in a separate section.) The earliest written monument of the German language, dates from the year 360. It is the translation of the four Gos- pels into the Mossothegische, by bishop Ulphius. The German language was therefore written earlier than many of the modern tongues, which the same emperors establishe-d schools in Gaul, in the sixth century, which, taught, however, only reading, writing, and a little bad Latin.

1. The first period of German literature begins with the reign of Charlemagne (768), who established several monastic schools, formed a kind of learned society at his court, and established schools of which the vast importance of the German language, in particular the ancient laws and songs, ordered the preaching to be in German, and caused several translations to be made from the Latin. His successors did not preserve the same spirit; but the separation of Germany from the Frankish empire was unfavorable to the development of the German language and character. The greatest progress was made under the Saxon emperors ('from
919), particularly the Othos, and under the Franconian emperors (from 1024). In the tenth century, churches, monasteries, and cathedral and abbey schools, which were endowed with libraries. To this period belong the writers of chronicles, Eginoard, Wittkind, Dithmar, Lambert, Bruno; the philosophical and miscellaneous writers, Alcuin and Eadmun Maurus (716-850), and particularly those who wrote grammatical and historical works, Gobelinus, whose metrical translations of the Gospels is remarkably faithful and concise (see Offried); Notker (abbot of Saint Gall, died 1022); Willerman (abbot of Ebersberg, in Bavaria, died 1052), and the author of the hymn to St. Anno.

The second period commences with the Saxonian emperors (1135), and extends to the time of the reformation, in the beginning of the sixteenth century. Germany had begun to be settled and cultivated in its interior, and cities were founded. The monastic schools, the expatriations to Italy, the crusades, the commerce, which took its way from the East through Germany, had diffused knowledge. Acquaintance with foreign countries, with science and refinement, had contributed much to the cultivation of the nation, particularly of the nobility. The court of the emperors of the Hohenstaufen dynasty spoke the Saxon dial, and was the protector of literature. The Minnesingers (see that article; see also German Poetry), and, after them, the Mastersingers (q. v.), used and refined this language, as the vehicle of the German romantic poetry. The privileges, rights, and laws of German countries and cities, began to be collected and put into writing in the beginning of the sixteenth centur. The Roman law had been the subject of treatises as early as the eleventh century, and applied to German institutions. Histories were also written, such as the Chronicle of bishop Otho of Freyningen, and his history of Frederick I.; the works of Henry of Herford (died 570), Gobelinus Persona (1450), and many others in the Latin language. The Chronicle of Otto of Horneck, in rhymed (born 1264), is the oldest great historical work in the German language. Sebastian Franke's Chronicle of the World is the first universal history. Philosophy, which had before consisted merely of translations of the philosophical works of the ancients, and of the Arabian, was now more diligently cultivated; it was combined with theology, and used for the defence of the church, by which it was in turn influenced. Among the schoolmen, several Germans were distinguished in the beginning of the thirteenth century, among whom was the Dominican, Albertus Magnus of Lauingen on the Danube (died 1280), who taught metaphysics in Paris, and in several German cities, and made extensive researches in natural philosophy. As a theological writer, the mystic John Tauler (died 1361) exercised a great influence. In the following century, the Strasburg theologian, Geyer of Kaiserberg, Sebastian Brant, a severe satirist (born 1458, died 1550), and his successor Thomas Murner (born 1475), were distinguished. At the end of this period, mathematics, astronomy, and mechanics were diligently studied in Germany; and several important discoveries were made. In the fourteenth century, the establishment of universities, and, in the fifteenth, the invention of the art of printing, made new epochs in literature. The rain of the Greek empire (1453), the scholars of which fled to Italy, and spread the graecism and the humanism over all Europe, by rendering the classical authors more accessible. During this period the co-operation of Latin and vernacular languages and poetry received a new impulse from the Silesian poets, as they are called—Martin Opitz, (1597-1639), Flemming, Andrew Gryphius, &c., and from the foundation of several literary societies (for
instance, the Fruitbearing Society, (q. v.), or the Order of the Palm, the Order of the Swan, the Flower Order, the Shepherds of the Baptist. The prophecy of Westphalia (1648) had the most salutary influence on exhausted Germany. As there was no central point, no capital to dictate laws to the nation, a freedom of investigation, of opinion, and of expression prevailed, which was found hardly anywhere else. Freedom of thought was particularly favoured in the rising state of Prussia. Different branches began to be treated in a philosophical manner; history and its auxiliary sciences, and public and private law, were thus raised to a more elevated character. Hermann Conring and Samuel von Fuflendorf are great names, which must be mentioned here. Otto Gnerike stands at the head of German natural philology. Whilst the greatest spirit of dogmatical controversy reigned in theology, there were men, like Spener and others, whose devout mysticism had a beneficial influence. One of the chief obstacles to the progress of German literature in this period, was the corruption of the German language. (See German language.) After thurnal sciences, the War of the Palatine Succession (1689) put an end to the Spanish and French had exerted so great an influence, it was corrupted by the mixture of foreign words, particularly Latin and French; but the learned John Daniel Morhof (died 1691), and the diligent Justus George Schottel, endeavoured to supply the want of a German grammar; and from the time of Gersdorff, to which Goethe contributed, the German language was used for literary purposes. With the increase of the political influence of France, this corruption of the language increased also. The greatest genius of his time in Germany, Leibnitz (1646—1716), made use of the French language, in preference to his mother tongue. The efforts of Christian von Wolf to render philological the literary associations and societies were everywhere formed. The book trade began to flourish, and many critical tribunals were instituted, to pass judgment on science and art. The Germans began to make the purity and elegance of their native language an object of attention. Alexander Baumgarten, the founder of philosophical criticism, and Gottsched, (1700—1766), contributed to this effect. The latter purified the language, but endeavoured, at the same time, to introduce the French taste for a tame style, both in poetry and prose. (See German Criticism.) His school, which was called the Leipzig school, was successfully opposed by that of Zurich, at the head of which were Bedmer and Breitinger. The poets, Haller, Hagelorn, Gellert, J. C. Schlegel, gave energy, elegance, and ease to their native tongue. The researches of German scholars were also directed towards classic antiquity, by philologists and archeologists (Joh. Mat. Gesner, Joh. Dav. Michaelis, J. A. Ernesti, and others), particularly after the foundation of the university of Göttingen. 3. These beginnings were matured, in the third part of this period, by Lessing, Klopstock, Winckelmann, Heyne, the Stolbergs, Herder, Wiebland, Voss, Schiller, Goethe. Lessing, gifted with a rare wit and penetration, appeared as the antagonist of the popular French taste, and the founder of acute criticism. The impetus of enthusiasm for antiquity and art, produced his immortal work, a specimen of elevated taste and extensive learning, in the midst of literary degeneracy and barrenness. Klopstock raised the German language and poetry, by his sacred songs, to a pitch of loftiness, richness, and originality, which it had never been before attained. The propagation of the influence of English literature, particularly the translation of Shakspeare. Adelung, Voss, and others, made critical researches into the structure and extent of the language, which was, at the same time, applied to every department of science. Numerous critical works endeavoured to give a right direction to the overflowing stream of German literature. A profound study of theology was promoted by the efforts of Michaelis and Ernesti, Mosheim, Semler, Storr, Reinhard, Schliechemacher, De Wette. Philosophy, particularly metaphysics, was developed in the original systems of Kant, Fichte, Schelling, Jacobi, and others. Philology was advanced by the labour of Heyne, Wolf, Hermann, Boeckh, Vater, Genesius, and many others. History presents names like those of John Muller, Woltmann, Schroock, Schmidt, Spittler, Eichhorn, Heeren, Niebuhr, Luden, Plank, &c. Nor should the services of Voss, Creuzer, Kämme, Gorres, in mythology, and of the creators of the most comprehensive encyclopaedias, who, in Germany, be forgotten in the general history of literature. A multitude of original minds have extended German literature in all directions. If the objection which has been made to modern German literature be well founded, that the manner has received too little of the attention which has been paid to the matter, it may be said, on the other hand, that the Germans, whose works are imperfect, on account of the novelty and greatness of the undertakings, and the excessive minuteness of investigation, than from a superficial treatment of the subject. (Compare the views of Madame de Stael on Germany, and the opinions in the fifty-second number of the Edinburgh Review.) If it may be observed, that a struggle has pervaded all the branches of literature. In theology, philosophy, and art, it is the contest between mysticism and the romantic spirit on one side, and rationalism and the severity of the ancient style on the other. In politics, history, and natural law, it is the contest between the old and the new. In theology, this opposition appears in the systems of rationalism and supranaturalism. In philosophy, the different systems, with regard to the sources of human knowledge, might almost be designated by the same names. In poetry and the fine arts, the spirit of classical and the romantic spirit are opposed to each other. Of an unquestionable and important influence upon German literature, have been the latest political events. The great body of literary men are deeply imbued with the patriotic tendency of the time. The German writers, since the general peace in Europe, have given to their works much more of a practical character than the writers of the previous times. Theological literature has displayed the old controversy between the rationalists and supernaturals, the former of whom either deduce religion from the principles of reason, and endeavour to explain the Scriptures in accordance with those principles, or merely endeavour to free religion from what is monstrous and superstitious. The latter are either dogmatists, founding their system on doctrines deduced from the Scriptures by a more or less literal interpretation, or mystics, who have adopted the idea of a divine illumination, proving and even extending the truths of revelation. Dogmatical manuals have been written by Reinhard, Breitinger, Wenscher, Schliechemacher, De Wette. A few writers, like A. L. Kahler, in his connexion between rationalism and supernaturalism, and A. Klein, in his Grundlinien des Religionsismus, have made fruitless attempts towards a reconciliation. The Catholics have begun
to extend their literature in this period more than ever before. With Van Ess's translation of the New Testament, and the truly Christian eloquence displayed by his preface, an intolerant spirit has appeared in other works. The increasing influence of the Catholic religion has inspired many Protestant writers with a greater activity. A temporary excitement was occasioned by the theses of Harmes, the miraculous cures of the prince Hohenlohe, and other productions of mysticism or enthusiasm. The discussions for the purpose of uniting the Lutheran and Calvinistic churches (which has been actually effected in some of the small states of Germany) have been of great interest; whilst, in the republic of letters, Schleiermacher's Christiana Glaubenslehre, in which the Christian doctrine was exhibited without a dogmatical dress, was intended as an instrument of peace. Meanwhile, theology, as a science, has made great progress. Exegetics have been improved: biblical archaeology and criticism have been extended on every side, by men like Gesenius, Griesebach, Rosenmuller, Kuinoel, Bretschneider, De Wette, Paulus, and others. The history of the church, and of dogmas, has been treated by learned writers, as Spittler, Staudlin, Bengel, Giesseler. Christian morality has been ably and profoundly handled by Reinhard, Flatt, De Wette, Eichhorn, and others. General theology has been cultivated by Staudlin and Bertholdt. In practical theology, we have the principal monks, e.g., Knebel, Brun Huss, Schudertoff, Taschirmer, and many others. Many useful popular theological works, also, have appeared, among which some of the most interesting are of the mystical kind, as the works of doctor Jung (Stilling), Kaume, and many others. The science of the law could not escape the influence of the age. Not only highly important questions of law, as, for instance, the subject of literary property, the liberty of the press, and the free navigation of the rivers, have been discussed, but the spirit of the time has demanded fundamental changes in the law, the establishment of civil liberty, the participation of the nation in the government, and the publicity of trials. The struggle between the adherents of the old system and the advocates of the new principles, has been renewed, but the princes have succeeded (till lately) in making the question entirely a literary quarrel, and in preventing it from resulting in action. One of the most valuable works which is Feuerbach's Be- trachtungen über die Öffentlichkeit der Macht- keit der Gerechtigkeitspflege (1821)—Considerations on public oral Trials. Another principal object of legal controversy in Germany, has been the question, whether the Roman law was not entirely contrary to the national character and institutions, and required to be superseded by laws of native growth, corres- ponding to the wants of the nation and of the age. Though the practical results of these discussions have not been very perceptible, yet the science could not but be improved by them. The histories of the law, by Savigny, Eichhorn, Geschen, Schrader, and others, are of the greatest use. At the same time, the science of criminal legislation has been ably treated by Kleinschrol, Feuerbach, Konopack, Mit- termaier. Numerous methodical digests of the law, among which those of Weining and Faleck are esteemed, facilitated the study. Philosophy, which had, for a long time, been employed in pulling down old systems, and building others, has, however, been driven from the schools long ago, and came from the schools into life, and found, in the affairs of the state and the church, objects worthy of its activity. Dead forms, as well as the dialectic art, had long since ceased to satisfy an age which valued speculation only in its relations to practical life. (See Philosophy.) Political writings have naturally been extensively read in a time of so much excitement. Though many of them could not but trouble or revolt impartial minds, and though but little lasted in the times in which they originated, yet they have, at least, the merit of extending the discussion of opposite views. One of the chief subjects of discussion, in political writings, has been the question of representational constitutions, which were promised at the time when the German princes wished to raise the whole population, to deliver the country from the burden of a foreign yoke. Von Duss, was afterwards evaded in most of the larger states, but was partially fulfilled in Wurttemberg, Baden, and Bavaria. Among the works which appeared upon this subject, was Wangenheim's Idee der Staatsverfas- sung. Another subject of interest was the murder of Kotzebue, and the establishment of a political in- quisition at Meta. The celebration of the reformation at the Wartburg, by the students (see Wartburg) afforded new causes of controversy between the liberals, on the one side, and the adherents of the old system and mercenary authors on the other. Gorres, in his Europe and the Revolution, and Germany and the Revolution, has given a new vitality to the views of the system of deception practised by the oppres- sors of Europe and Germany. The feeling of independence among the Germans, kindled anew by a victorious war against foreign domination, gave rise to new researches into the history of the country, and to associations for the study of history. The most successful of these was the society established at Frankfurt on the Maine, in 1818, for the publication of historical docu- ments, and original writers on German history in the middle ages. Other early documents of German history were, also, diligently examined. Luder's history of the Germans is an important work. Menzel also wrote a history of Germany. Whilst recent times have been accurately described by Snell, the middle ages, so often depreciated or overrated, have found an impartial historian in H. Luder. Universal history, also, has been treated with great learning, by Frederic Christian Schlosser, and the period of the crusades has been critically examined by Wilken. Ancient history has not been neglected. Frederic von Raumer's Vorlesungen über alte Geschichte opened a new method of investigation. In particular, the study of the ancient Greek history has been illustrated, in many essential points, by Muller and Kortum. The earlier history of Rome and Greece has received much attention from Lehmann and Wachsmuth. The controversy on the mythology of the ancient nations has been carried on by Creu- zer, Moser, Ritter, Voss, Hermann, D. Muller, Lo- beck, Baur, and others; and so much, at least, has been agreed upon,—that, in tracing back all the Hellenic institutions to India, the system had been carried too far, in some instances. L. Wachler has continued his labours on the history of literature. On the history of the ancient art, with particular reference to lord Elgin's marbles and the remains of Ægean art. Thiersch, Hirn, Grotendief, D. Muller, and others, have consecrated themselves. Stiegitz, Busching, Fiorillo, Muller, Von der Hagen, Joanna Schopenhauer, Waagen, and particularly the brothers Boiserée, have contributed to illustrate the history of ancient German art. Philology, to which the Germans have always been particularly devoted, has not been neglected. It is only necessary to mention the editors of the classical works (Plato), Poppo (Thucydides), Bockh (Pindar), Herm- man (Sophocles), Lobneck (Phrynichus), Bothe (Ho- race, after Fea), Bekker (Attic orators), Schaifer, &c., and the translations by Thiersch (Pindar), J. H. Voss (Aristophanes), Von Knebel (Lucretes), and the lexicographical labours of J. G. Schneider, Pas-
sow, Lunemann, and others; and the great undertaking of the Berlin academy, the Corpus Inscription. Grac., edited by Borch, the excellent Latin grammar of Schneider, etc. The Oriental languages and literature were also cultivated by the labours of Gesenius, Von Hammer, Gorres (who translated the Schah-Namah), and others. Hindoo literature has been cultivated by A. W. Schlegel, J. G. L. Rose-garten, D. Frank, and Francis Bopp. The great Encyclopaedia of Erck and Gruber may furnish future times with a standard of the cultivation of the present. The bibliographical lexicon of Ebert will fill a void in bibliography. The biographical work of Erck has been enlarged and improved, in a new edition. Among the periodical publications, the Litteraturzeitungen of Halle and Jena, the Göttingen gelehrte Anzeigen, review every new publication of importance. The Heidelberger Jahrbucher der Litteratur, Hermes, and the Wiener Jahrbucher, confine themselves more to the important publications. The Isis of Oken was chiefly remarkable as the representative of the spirit of the age, though natural philosophy, politics, voyages, and discoveries, which were published with daily perfection, were so much impressed by the government. The Morgenblatt, die Zeitung für die elegante Welt, etc., are calculated, not only for amusement, but also for instruction of the cultivated classes. The Litterarischen Conversationsblatt (published since 1826) presents the opinions of all literary parties. There is one journal, called Britannia, relating to Great Britain, and two reviews relating to America. The history of German literature is given in the excellent lectures of Wachler (Frankfort on the Maine, 1818, 2 vols.) For further information on subjects of German literature, see the subsequent divisions, German Prose and German Poetry.

German Prose. This has undergone more numerous changes than German poetry. The first attempts at composition in German were translations, as early as the eleventh century. At a later period, many of the romantic tales, and fragments of epic poetry, were translated into prose; but this owed its complete development more particularly to some mystical theologians, of whom Tauler (died 1361) was the earliest and the most distinguished. He himself, however, wrote mostly in Latin; but his sermons were written down by his friends in German. The picturesque style of Dufay (born 1430) was the foundation of the German in his works on fortification, and on the proportions of the human figure. John Turmayer (Aventinus), in his historical works, Sebastian Franke, both in his historical and theological writings, and others, wrote before Luther. Luther, from the beginning of the reformation to his death, continued to improve his style, and gave to the literary language, the High German, which had been formed amidst the different spoken dialects, authority and grammatical consistency. The mystical writings of Jacob Bohme enriched the language with metaphysical and philosophical expressions, whilst Fischart, Schuppe, and other satirical writers, gave it life and point. The writings of Abraham a Sancta Clara (Megerle), the representative of the popular style of preaching of his time, are full of wit, imagination, and truth, but are coarse and undignified. The thirty years' war was followed by a period of barbarism, in which the German language was a corrupt medley of foreign words from the ancient tongues of Europe, Latin and French. The language of the learned was Latin, that of the courts was French. German survived only in the pulpit and in society. Thomasius revived the use of the vernacular tongue in scientific works. From this period, a gradual improvement of the German language is perceptible, notwithstanding the Gallonaria of Frederic the Great and his court, until its complete triumph in the hands of Lessing. Two circumstances rendered this difficult. The language was behind society in refinement, as the French was the language of the nobles and the cultivated; and there was never any room for political or forensic eloquence. There were only three fields for the prose style—sacred eloquence, works of fiction, and the language of science. Pulpit eloquence was re-stored to its dignity by Laurne Mosheim, born 1694, died 1760. He followed his sacred vocation as a pulpit orator—Sack, Jerusalem, Cramer, Spalding, Giescke, J. A. Schlegel, Zollikoffer, Teller, Sturm, Reinhard, Marezz, Ammon, Niemeyer, Hanstein, Ribbeck, Stolz, Laffler, Draseke, Harms, Krummacher, Sailer, Schleiermacher, De Wette, Schatter, Tschirner, and others, many of whom are highly distinguished in other branches of literature. The elegant prose literature, and in particular the German novel, had been improved by the endeavours of Gottsched, and the many critical journals of his time. Haller published his Usung, and other political novels, and Gellert his Life of the Swedish Countess Birkenstock, the first satire in the German language. At the same time, he improved the epistolary style. The novels of Richardson were translated into German by Duschen. Hermes wrote many successful works in the style of Richardson. The novel became the favourite branch of the German authors, and was carried on, for the purposes of religious, philosophical, and political instruction. Engel, E. J. Mulder, Nicolai, Sebaldu Nothander, A. G. Meissner, J. H. Jung, F. Schultz, are interesting novelists. Naubharnd and Fessler wrote historical novels, whilst Miller's Sigwart was distinguished for its excessive sentimentality. Aug. Lafoant was followed in his first and original novels with an endless flood of inferior imitations of the first. Jacobi and Fries wrote philosophical novels. Doctor Jung published religious novels and tales; Pestalozzi, a tale called Lienhard and Gertrude. F. Klinger is a satirical novelist. Though Wieland's Greek heroes and heroines frequently philosophize, they do it with an Attic grace, and generally with Attic wit. He gave to the shift of his prose of his time the ease and beauty of nature, though he often wrote with too much negligence. Goethe, after his Sorrows of Werther had powerfully excited the sentimentality of that period, gave to the literary language of Germany a new style—pictures of life a high poetical interest, by the spirit with which he analyzed and harmoniously arranged their elements, and by the rich simplicity of his language. He is a master in narrative and descriptive prose. Jean Paul Frederich Richter overflows with wit and original humour. Virtuous enthusiasm, and the tenderest love of mankind, breathe from his deep reflections, as well as from his charming details of humble life, and his attacks on the crimes and follies of our time. Novalis expressed his mystical feelings, in the novel Heinrich von Ofterdingen, in inspired language, full of romantic simplicity. Wagner brought the philosophical views and picturesque situations of life in a dignified and animated style. Thumel and Claren were two writers of a sentimental and witty, but graceful frivolity. While Charles Hoffmann gave vent, in comic and passionate description, to his sparkling humour and his feverish melancholy, Theodor von Holbein the most refined German, the manners of the higher classes, and of religious sects. Carolina von Pichler is also to be mentioned as an elegant and highly interesting author. Besides these, there is a number of very interesting novels, of so different a tendency as the style and the talents of the authors are various, the names of which cannot be mentioned.
here. The mass of the terrible stories of knights, ghosts, and robbers, which used to fill the circulating libraries, and the imagination of the middle classes of readers, must not be forgotten. Spies and Cramer were two of the principal writers of works of this class. The scientific and critical German prose writers are mentioned under the articles German Literature, German Criticism, &c. There remain to be mentioned the authors distinguished by their style as historical writers—Spitler, Heeren, Eichhorn, Joh. Muller, Joh. N. Voigt, Posselt, Schiller, Wolzmann, Plank, Loden, Politz; as philosophical writers, Kant, Heidebreich, Fichte (in particular in his admirable dissertations on the nature of things). In his Discourse on the Relation of Nature to the Plastic Art, Friedrich Heinrich Jacobi, Steffens (On the Present Age), Winckelmann (died 1768), Justus Moser (died 1794), Helft. Peter Struza (died 1799), Johann Kaspar Lavater (died 1801), George Forster, traveller and political writer, Lichtenberg, a man of striking wit, and a caustic mind, best known by his illustrations of Hogarth’s caricatures, Sulzer (died 1779, author of the Theory of the Fine Arts), Thom. Abbt (died 1779), Garve (died 1798), Moses Mendelssohn, but, above all, Lessing, the two Schlegels, in particular A. W. Schlegel, Koppen, the truly patriotic Caro, from the above-mentioned collection on the history of the arts (q. v.), Niemeyer, Jacobs, Dohr, in the treatment of particular branches of science, Feuerbach, Zscharach; in the picturesque description of nature, Humboldt, Zimmermann.

German Poetry. If, under the name German poetry, we include all the poetical productions of the nation, from the earliest time to the present day, it will be difficult to describe it by any general term, as its tendencies have been so different at different times. But, excluding everything foreign, every mere accidental modification, we shall find that German poetry is characterized by depth of feeling, truth, and reflecting spirit, clothed in a strong, picturesque, and expressive language. The history of German poetry may be divided into three periods, according to the divisions made in art. *German Litterature.*

I. The heroic songs of the ancient Germans, of which Tacitus speaks, are lost. They served as chronicles to a nation ignorant of the art of writing, and preserved the memory of their heroes and princes. It has been conjectured that the songs which Charlemagne caused to be collected and written out, were of the nature of these; and that many of those productions are extant, the fragment from the song of Hildebrand, published by the brothers Grimm, from a manuscript in Cassel (1812), must be reckoned among them. During the period immediately succeeding the introduction of Christianity into Germany, German poetry consisted merely of translations and paraphrases from the Bible, valuable only as monuments of the language. Otfrid’s Harmony of the Gospels, in rhymed verse, written in the time of Louis the German, is the most important of these biblical poems. The earliest German ballad celebrates the victory of Louis II., king of Neustria, over the Normans (891). From the time of the emperor Henry IV., we have the hymn in honour of his tutor, St Anno, archbishop of Cologne, in the dialect of the lower Rhine. In the other poems which we have mentioned, the Upper German dialect, particularly the Franconian, &c.

II. The reign of the Saxon emperors of the Hohenstaufen family is included in the first division of this period. It is the age of the poetry of chivalry and of the Minnesingers, and is usually called the Saxon age, in the history of poetry, on account of the Saxon origin, both of the Hohenstaufen emperors and the best poets of the time. On account of the universal prevalence of the Saxon dialect, which was the richest and most cultivated, as the language of poetry. The increasing cultivation of Germany, arising from the growing wealth which commerce and foreign conquests had produced; its relations with Italy and France, particularly, from the time of the residence of Frederic Barbarossa in Provence; the crusades, which kindled the spirit of chivalry to a romantic enthusiasm; the taste for the arts cherished by the Hohenstaufen race,—combined with other causes to promote the rapid development of poetry in this period. German emperors and princes were themselves Minnesingers; their courts resounded with the notes of wandering minstrels, and poetical games alternated with tournaments. The example of the princes was imitated by the nobles, and poetry thus became an essential element in the life of the higher classes. The series of Minnesingers, that is, narrative poets, begins with Henry of Veldecker (1170); and the names of almost 300 poets, who, during this short period, sang of love, the ladies, and the honours of knighthood, are known to us. A collection made by Rudiger von Mannes, in 1315, contains the works of 140 of them (Zurich, 1765—50, 2 vols.). Of the modern Minnesingers, Wolfart of Eschenbach, von der Vogelweide, Henry of Oftering, Hartmann of Aue, Ulric of Lichtenstein, Godfrey of Strasburg; and one of the latest is Conrad of Wurtzburg. Most of the Minnesingers confined themselves to the subject which their name denotes. They sang of love, and of their ladies in lyric strains, full of delicate, deep, and animated feeling, and, at the same time, with few exceptions, with great purity of feeling. Many of them also wrote epics. The national tales are often wrought from traditions of the old times of paganism, and relate to the storms and wanderings of the nation, at the period of the overthrow of the Western Empire. The principal heroes of these stories are Attila, the king of the Huns, and Theodor, king of the Ostrogoths. The principal poems of this kind are the Niebelungentlied (q. v.), a romantic epic of great merit, both in regard to the plan and execution, and the Heldenbuch, composed by different authors, and founded on traditions of the highest antiquity. The foreign materials are mostly of the Provençal, Norman, and British origin. They consist of traditions relating to Charlemagne and his paladins, and king Arthur and his round table, and the ann greut (the plate from which the Saxons ate the meat at Meister), and which afterwards received his blood). Among the poems of this series, are Wolfram of Eschenbach’s Markgraf von Narbonne, Titurel, and Parzival; Godfrey of Strasburg’s Tristan; Hartmann’s Inwagen, and many others. The Roman and Greek antiquity and history also furnished materials, which were, however, arrayed in the dress of modern chivalry. Henry of Veldecker’s Eneid, and the Trojan War, by Conrad of Wurtzburg, are of this kind. With Rodolph of Hapsburg, and the turbulent times of feudal violence, began the decline of genuine chivalry in Germany, and of that purity which sprang from it, and was dependent on it. In the period of transition from the poetry of the Minnesingers, and of chivalry, to that of the Mastersingers and of civic life, are found some didactic and satirical works, as Der Remer of Hugh of Trimberg (1300), and the fables of Bremer Schwänke und Bader (1384). About the middle of the fourteenth century, the schools of the Mastersingers were formed, particularly in the cities of Mezen, Nuremberg, and Strasburg. These schools partook of the nature of academies and of guilds, and the art of
poetry degenerated to a mere mechanical labour. Nevertheless, there were, among the Mastersingers, men like Hans Sachs, and before him, Hans Rosenplut and Hans Folt, who laid the foundation of the German theatre. Hans Sachs (1494—1576), perhaps the most fertile of poets, excepting the Spaniard, Lope de Vega, was the most distinguished. The period of the Mastersingers, in general, displays much comic and satiric humour. The celebrated satirical poems of this period were, at the same time, effects and causes of the great intellectual fermentation which resulted in the reformation. Among them are distinguished Remard the Fox, by Henry of Alekmaer; the Narrenschiff (Ship of Fools), by Sebaldus; the famous Murerisches Trabanten-gefang (Conspiracy of Fools), and Schellenzufuot, Rollenhagen's Frischmausen, and the writings of John Fischart. Unconnected with these schools are many popular songs, produced in the thirteenth century, which, from the variety of their subjects, relating to all the ranks, feelings, and situations of life in those times, and their spirit, liveliness, boldness and gayety, present a phenomenon in literature. In the fourteenth and fifteenth centuries, singing and music had become a necessary amusement of the German people. This produced a popular poetry, which spread through all classes of society, and superseded, in some degree, the productions of the Mastersingers; as instances, may be mentioned the excellent war songs of Veit Weber. In the seventeenth century, the revival of learning, and the decline of the national prosperity, were equally injurious to this kind of poetry. In the fifteenth and sixteenth centuries, epic poetry began to assume an allegorical and historical character, as, for instance, Malchior Pflüng's, Teuerdank (of which the emperor Maximilian I. is the hero), and to approach the form of the romance. Ballads had already become distinct from the longer romantic poems, and gave rise to those popular books, Die Melusine, Magdalene, the reading of which is the delight of the younger classes at the present day; and to which have been added later original productions, as the famous Till Eulenspiegel. See Eulenspiegel.

III. The third period of German poetry commences with Luther, not so much on account of his poetry as on account of his influence as the creator of a new German language. As a religious poet, the sincerity and passion of his hymns and his images are animated and vigorous; his images are taken from the Bible; his poetical style and language he formed himself, and took the materials, not so much from any preceding poetry as from the circumstances of his country at the time. With him began a series of sacred poetry, which for a long time was unaffected by the influences of profane poetry. Melissus Andrea and Wackherlin were the earliest writers of the new school. The latter entertained the design of transforming the poetry of his country. He introduced the Alexandrine verse. At the head of the first Silesian school was Martin Opitz, of Böberfeld (born at Buntlaw, 1570, died 1630). He endeavoured to supply by correctness what he wanted in inventive genius; and, in this respect, was of service to the language. The ancient classics were his models; but yet he was contented with imitating the French, and their imitators, the Dutch poets. He introduced the term of quantity, intending to ratio of number of syllables. As he is not without richness of imagery and warmth of feeling, his lyrical poems contributed, notwithstanding his false taste, to revive and enrich German poetry. Among his numerous followers, many of whom are religious poets, the most distinguished are Paul Fleming (1600—40), Sim. Dauch (1605—39), A. Tscherning (1611—64), and Paul Greuter (1626—79), F. von Logau (1604—55), A. Gryplius (1616—69), and Jacob Balde (1603—49), wrote in Latin verse; the other, Frederic Spee, published his poems in German, under the title Trutz Nachtigall. In this period, a number of poetical societies were established; for instance, Die fruchtbirgende (the fruit bearing) of Ansbach; the Fischerschen Gesellschaft, of Angermünde; the Order of Flowers, the Shepherds of the Pegnitz, established 1644, at Nuremberg, and others, most of which aimed at the improvement and unity of the language, and the reformation of poetry, but eventually degenerated into petty pedantry and affectation. With the second Silesian school, an affected imitation of foreign taste, particularly of the French, degraded German poetry to the lowest degree. Christian Hoffmann, of Hoffmannswaldau (1618—79), a poet of some wit, but without genuine feeling, introduced the conceits of Marino and similar poetasters to the admiration of his contemporaries. His poetry is bombastic, impure, and empty; he endeavoured to hide his genuine taste by genuine bombastic sentimentality. The same false taste also wasted the poetical talents of Daniel Gasper von Lohenstein (1635—98), to whom the false and original cannot be denied, notwithstanding his conceited and antithetical style. His novel Arminius and Thasmeda unites uncommon vigour with the greatest faults of his time. His imitators are distinguished by exaggeration and affected sentimentality; as, for instance, Henry Anselm von Ziegler (1663—97), author of the Asiatic Banisse. This mania lasted till the middle of the eighteenth century, and was insensibly opposed by the satire of Wernike and others. It was followed by a flood of stale and insipid occasional poems, among the authors of which, the baron Canitz (1654—99), Neukirch, Besser, &c., were celebrated in their time. Only a genius like that of the unfortunate Gutember, was able to sustain itself above the general deluge. Gotschel endeavoured to purify the language from foreign influences, but the other half of his period was filled with poetry of life, by placing its chief merit in smoothness and clearness in the French taste. He was soon opposed by the Swiss, Bodmer, and Breitinger, who were animated by the great minds of antiquity and the spirit of English poetry, and who endeavoured to revive the German poetry of the middle ages. Albert von Haller supported this school by his vigorous poems, abounding in thought. Gotschel's school was followed by the Leipsic association of younger poets and authors, some of whom are to be mentioned as the heralds of the golden age of German poetry; as, for instance, J. A. Coen (1745—99), Chr. Furchtighet Geller (died 1767), with his fables and sacred hymns; G. W. Rabin (died 1770), known by his satires; F. W. Gleim (died 1803), more successful in his war songs than in his Ammerocites; Chr. F. von Kleist (died 1795), I. P. Uz (died 1796), F. W. Zacharia (died 1777), a satirical poet, not without wit and imagination. For his descriptive fables, Hagenauer distinguished for an easy and natural style and refined taste; Solomon Gessner, the creator of a new idyll poetry, was characterized by simplicity and innocence, and a taste for the beauties of nature. The revolution was finally effected chiefly by three men, unlike each other in every respect, except their just esteem for antiquity, and an independence and