ENCYCLOPAEDIA AMERICANA

VOL. V

ENCYCLOPÆDIA AMERICANA.

A

POPULAR DICTIONARY

OF

ARTS, SCIENCES, LITERATURE, HISTORY, POLITICS AND BIOGRAPHY,

BROUGHT DOWN TO THE PRESENT TIME

INCLUDING

A COPIOUS COLLECTION OF ORIGINAL ARTICLES

IN

AMERICAN BIOGRAPHY;

ON

THE BASIS OF THE SEVENTH EDITION OF THE GERMAN

CONVERSATIONS-LEXICON.

EDITED BY

FRANCIS LIEBER,

ASSISTED BY

E. WIGGLESWORTH AND T. G. BRADFORD.

VOL. V.

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EASTERN DISTRICT OF PENNSYLVANIA, *to wit:*

BE IT REMEMBERED, that on the tenth day of August, in the fifty-fourth year of the Independence of the United States of America, A. D. 1829, Carey, Lea & Carey, of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words following, to wit:

"Encyclopædia Americana. A Popular Dictionary of Arts, Sciences, Literature, History, Politics and Biography, brought down to the present Time; including a copious Collection of Original Articles in American Biography; on the Basis of the seventh Edition of the German Conversations-Lexicon. Edited by Francis Lieber, assisted by E. Wigglesworth."

In conformity to the act of the Congress of the United States, entitled, "An Act for the encouragement of learning, by securing the copies of maps, charts and books to the authors and proprietors of such copies, during the times therein mentioned:" and also to the act, entitled, "An Act supplementary to an act, entitled, 'An Act for the encouragement of learning, by securing the copies of maps, charts and books to the authors and proprietors of such copies, during the times therein mentioned;' and extending the benefits thereof to the arts of designing, engraving and etching historical and other prints."

D. CALDWELL,

Clerk of the Eastern District of Pennsylvania.

At the beginning of this work, it was mentioned, that the zoological articles would be contributed by Dr. Godman of Philadelphia. It has now become our painful duty to inform our readers, that we are deprived of his valuable assistance by his death, which took place on the 17th of April, 1830. The articles in this department will, however, be communicated by a gentleman whom Dr. Godman himself designated to supply his place.

The recent great and rapid changes in the state of the world, which continually present new accumulations of matter of general interest, and the laborious nature of the present undertaking, having rendered additional assistance necessary, to enable us to bring out the volumes with sufficient despatch, Mr. Bradford, whose name now appears on the title-page, is engaged to aid permanently in the remainder of the work. We ho to be able, therefore, to gratify the wishes of our readers, in future, by the publication of a volume every three months.

FRANCIS LIEBER.

Boston, Dec. 1830.

An improved form of the tabular view of the European States, belonging to the article *Europe*, in Vol. IV, will be found immediately after the Index to this volume.

ENCYCLOPÆDIA AMERICANA.

EVELYN, John; an ingenious cultivator of philosophy and the liberal and useful arts in England in the 17th 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 Baliol college, and thence removed 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 favor of the royal cause in 1659; on which account he was much favored by Charles II, after his restoration. In 1662, he published his *Sculptura*, or the History and Art of Chalcography, 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 most celebrated publication. This was *Sylva*, 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 Cider, &c. (1664, fol.); a work several times reprinted, particularly in 1776 and 1812, with the improvements 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 (1675, 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 office of privy seal during the absence of the earl of Clarendon in Ireland. He continued in favor 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 *Mundus muliebris*; or, the Ladies' Dressing Room unlocked and her Toilette spread, in Burlesque; together with the Fop's Dictionary, or Catalogue of Hard Names and Terms of the Art Cosmetic, &c., first printed in 1690.

EVERDINGEN; the name of a celebrated Dutch family of painters. Of these, Cæsar van Everdingen was distinguished as a portrait and historical painter and architect. He was born at Alcmaer, 1606, died 1679. His younger brother Alder van Everdingen, was a celebrated landscape painter, born 1621. His sea pieces, in which he represents the disturbed element 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 Renard the Fox. He died 1675.—The youngest brother, John, born 1625, was a lawyer, and painted only for 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 Vassenaer had made the flag

of Holland respected by all nations; and several members of the Evertsen family, which originally belonged to Zealand, all companions and pupils of those naval heroes, followed worthily in the steps of their great leaders. A brother of John Evertsen, 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 enter again into active service, and to devote myself for my country. My father, my four brothers and my son, have already fallen honorably 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. Aug. 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 Cornelius Evertsen (a son of John Evertsen), who died 1679, and Galin Evertsen (likewise an admiral in the Dutch service, and a descendant of the elder Cornelius Evertsen), who died 1721.

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 reasonings 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 rights 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 reasoning upon probabilities. In our discussions on this 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, recognised in England and America. 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 go before 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 dispute between 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 it. It is *credible*, when, being introduced, it affords satisfactory proof of the fact. It follows, 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, it may be such, as, if before them, 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. Whenever the fact is 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 admixture in it of some circumstances

of presumption, though the presumption may usually be deemed irresistible 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 temptations to suppress evidence; the very nature 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 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 to accompany them. Some presumptions of this nature are so strong and irresistible, that the law adopts them as *presumptiones 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, favorable or unfavorable, often arise from the conduct, or motives, or want of motives, or character, 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. One is, that a man naturally intends the end and 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 will not be permitted to set up as a 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 any evidence of mere private intention 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 probable. Where the principal act or title is proved, 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 20 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 7 years, unexplained. An heir will be presumed to be in possession of land, of which his ancestor died seized. After 20 years enjoyment of an easement 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 mere declarations of third persons, 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 evidence, 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 *res gestæ*, 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 tomb-stone, 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 (*lis mota*), are admissible, after their decease, in proof of the fact. But it has been lately said, that such declarations, made *post litem motam*, 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 boundary, that a post was put down 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 accused of the crime. To go at large into 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. In general, it may be said that all persons, not under any known disability, are competent witnesses. Several grounds of incompetency exist, in the common law of England and America. 1. The first is, want of reason or understanding. Persons insane, lunatics and idiots, are incompetent to be witnesses. But lunatics and persons temporarily 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. If they have too little mind 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 jury.—2. A second ground of incompetency is the want of religious belief. The law, in order to justify the administration of an oath, or a solemn equivalent affirmation, requires that the party should believe, that it is obligatory upon his conscience, and that he becomes thus bound to tell the truth. But there is no certain sanction or obligatory force upon the conscience of a man, unless he believes, that his telling or not telling the truth, will, at all events, make him accountable to a Supreme Being for his conduct; and that, if he tells a falsehood, the Supreme Being will punish him accordingly. It is not sufficient, by the common law, that a witness believes himself bound to speak the truth from a regard to his own character and the opinion of the public, or his own permanent interests, or the civil punishments annexed to perjury. Such motives (as has been justly said) have their influence, and may be brought in aid of religious obligation; but they do not supply its place. Indeed, they are of so uncertain a nature, so liable to be perverted to wrong purposes, so infirm in their operation, and so mixed up with other motives, of present reward, of future favor, of hatred, or kindness, or prejudice, that they do not afford a solid foundation upon which to rest our confidence. But if a man does believe in a superintending Providence, and in his responsibleness to that Providence for all his conduct; if he feels that the eye of God can search his thoughts, and that he cannot escape his notice or his power, but will receive at his hands according to his deeds, there is a most solemn and affecting influence upon his mind. He may not always, with this belief, avoid falsehood; but he has the highest motives to do so. Our law, therefore, requires that a person, to be a witness, should believe in the existence of a Supreme God, to whom he is accountable for his actions. The rule is usually laid down, in our books, with this addition—that he should also believe in a future state of rewards and punishments. And it has been accordingly held by some judges, that if he does not believe in a state of punishment, but only of reward, in a future world, he is not a competent witness, although he may believe in punishment in the present world, for all crimes, by the order of Providence. But this doctrine has been doubted and denied by other judges, who think, that if a witness believes in a God, and that he will punish him in this world, if he swears falsely, he is admissible, notwithstanding he may not believe in a future state, or if he does believe in a future state, that he will be liable to any punishment in such state. This latter opinion was held by lord chief justice Willes, in the case of Omichund *vs.* Barker (Willes' R. 538), and he is himself of very high authority. But upon such a question, where very able judges have differed, it becomes us to say no more than that the question may still be deemed unsettled. It was formerly a rule, that infidels, or disbelievers in Christianity, such as Jews, Mohammedans, and the various kinds of heathen, were not competent witnesses. But that rule has been abrogated for a considerable length of time; and it now matters not whether a person be a Jew or a Christian, a Mohammedan or a Hindoo, if he believes in a God, and in his responsibleness to him for his conduct, and that he will be rewarded or punished according to his conduct, he is a competent witness. This has been firmly settled in our law, at least since the great case of Omichund *vs.* Barker (Willes' R. 538), in 1744—5. But atheists, and such infidels as profess no religion, or do not believe in any responsibleness to any Supreme Being for their actions, are incompetent witnesses.—3. A third ground of incompetency is infamy of character. But this infamy is not that, which is morally attached to a man for his private profligacy and dissoluteness. That is not sufficient to exclude him as a witness, though it may go far to diminish his credibility. But the infamy, of which we speak, is that which results from a conviction of some crime deemed, in the law, infamous. It is not sufficient that a party has been convicted and punished for a crime; nor that the punishment itself is deemed by the public degrading and infamous. But the offence must, in its own nature, be infamous. All capital offences and felonies are deemed infamous; all offences importing fraud and gross moral depravity; every species of the *crimen falsi*, such as forgery, perjury, subornation of perjury, piracy, bribery, conspiracy to accuse another of a crime or to commit a fraud, swindling, cheating, grand larceny, and uttering counterfeit paper. Many other offences, 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. And it seems that our courts will not exclude a party as a witness upon a mere conviction of an infamous crime in another state or country, though it will form a strong objection to his credit. 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 on account of interest. It is, in our law, a general rule, that all witnesses, interested in the event 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 child, master and servant, guardian and ward. But an attorney or counsellor 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 evidence, for or against him. The interest, 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 English rule; but, in some of the American courts, it has been otherwise adjudged. 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 of the servant; so a tenant, to establish his landlord's title; so a devisee in a will, to prove the will; so a creditor, to increase the fund of a bankrupt's estate. These are merely put by way of example. If a witness have 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 in any manner, his competency 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. But this rule has been, in many of the American states, abolished by express legislation.—There are certain exceptions to the rule, as to the incompetency of witnesses on account of interest, which have been recognised in our 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. So in America the party, whose name is forged, on an indictment for forgery; but the rule is otherwise in England. The rule of allowing interested testimony, *ex necessitate*, is to be understood not of a necessity in the particular case, but of a general necessity in cases belonging to that class.—If a witness be not interested at the time when 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 on evidence.—In concluding this head, as to witnesses, we may advert to another exception, which has been extensively, but not universally, adopted in America. It is, that a party to *negotiable* paper shall not be allowed as a witness to prove its *original invalidity*, although he may be a witness to establish any subsequent fact. The same rule formerly prevailed in England; but it is now abrogated there.

In respect to oral or unwritten evidence, there are some other rules, which it may not be without use to state. And, 1. first, as to *admissions*. These, when made by the party himself, or by his agent 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 gestæ;* 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 are made in the course of executing 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 gestæ*. His admissions at another time, or in another employment, are not so. What he states while he is doing an act, as 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. They are often conclusive, when the party has thereby induced another to act, or give credit. In many other cases they may be contradicted, where they do not operate as a fraud on other persons.—2. Secondly; in respect to *confessions*. The common law seems to have taken a distinction as to the effect of confessions in civil cases and 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 confession 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 ascertained in consequence of any confession are, in all cases, evidence; as if a party confess, that he has stolen goods, and tells where they are hidden, and they are found, his statement, that they were there, would be evidence against him, coupled 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 witnesses. Generally speaking, by the common law, the testimony of a single witness, if believed, is sufficient 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 corroborate 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. By the constitution of the U. States, no person can be convicted of treason unless on the testimony of two witnesses to the *same* overt act, or on confession in open court. In England, any confession would be sufficient, even when made out of court, if proved by two 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 defendant (being under oath), as to facts which it positively and clearly denies, will prevail, unless disproved by two witnesses or one witness and corroborative 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 divisible into various sorts:—1. Statutes or acts of the legislature. These, if of a *public* nature, are evidence 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 evidence by some special law, they are admissible 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 evidence in cases between strangers. When the judgment is directly upon the point, it is a bar between 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 collaterally in question in the suit, nor of any matter incidentally cognizable, nor of any matter of inference 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 convicted 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 sentences in changing the property. So sentences 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 admissible as evidence of such right, custom, &c., in suit between third persons.—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 judgments of record.—4. Depositions also, awards, and examinations by magistrates, are often evidence in cases between the same parties. There are also cases, in which public writings not judicial, such as journals of parliament, public gazettes, rate or tax books, ship's registers, rolls of manor courts, corporation books, and books of public entries, &c. &c., are evidence. But to go at large into the distinctions applicable to them would occupy too much space.

V. In respect to *private* writings, the rules applied 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 himself may be given in evidence, in his own favor, 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 debits and charges for goods sold, for labor 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, if it is objected 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 witness be dead, or out of the country, the handwriting of the witness must be proved by some person acquainted 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 witness who subscribed it, the handwriting of the party who executed it may be proved by some person who is acquainted with it. But it is not sufficient to prove it by comparison of the handwriting with the known handwriting of the party, though such evidence may be admitted in some cases as corroborative

evidence. And it has been held, that in case of 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 loss (and the party to whom it belongs 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 witnesses.—In respect to *written* 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 he has two manors in B, the whole difficulty arises, not from the instrument 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 all 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, of themselves, 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 deliberation, and to contain 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 contracts 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 operation of the custom. So the usages of trade are, for a like reason, admissible, not to supersede, but, in effect, to expound 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, where the mistake operates in fact as a fraud upon the party. So in relation to ancient instruments, 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 acquiescence, are presumed to have put the proper construction on 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 proofs of certain contracts. In our 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 estate; and contracts, which are not to be performed within the space of a year after they are made. Probably, in most countries, the civil policy has 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 rules, which did not properly fall 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, *primâ facie*, of their authority; for it would be criminal so to act without authority. So, where the fact lies more immediately in the power of the other party, or his acts conclude 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. But there are certain exceptions; as, in questions of science or trade, persons 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 substance only of any particular point or issue of fact 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 in the proof of a date, or of some words of a contract, or of the time and place of making it, or, some of 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 without 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 holydays and festivals; of public proclamations, and other public documents of the executive and legislative departments; of the nations with which we are at peace or at war; of the nations and sovereigns acknowledged 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 statutes, of local customs and usages, of foreign laws, of peculiar tenures, and, in many instances, of local, geographical divisions, not necessarily involved in the discharge of public duties, judges and courts will not take notice.

We here finish our sketch, and refer the reader, for more full information on the common law doctrine of evidence, to Peake on Evidence; Phillips on Evidence, and Starkie on Evidence, whose treatises are full of practical illustrations upon all the leading questions.

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 *Manœuvre.*) 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 Marguetel de St. Denis), lord of St.; born in 1613, at St. Denis le Guast; one of the most lively writers of his times, who paid less attention to abstract speculations than to the philosophy of social life. He studied law, but subsequently entered the military service, was present at Nordlingen and Freyburg, with the rank of captain, and, in the war of the Spanish succession, was created field-marshal. In society, he was distinguished for his wit and penetration, 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 indiscretions in his conduct and in his writings, he was imprisoned in the Bastile. He afterwards escaped a second arrest only by a flight to England. He died in 1703. His *Œuvres mêlées* 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. Profound views are rarely met with in them.

Ewald, John, one of the most original Danish poets of modern times, particularly distinguished as a tragic and elegiac poet, was born at Copenhagen, in 1743, but was educated in Sleswic, 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 innumerable hardships in remote 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 search of a desert island. This step only increased the severity of his father, who, being determined 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 became intolerable to the young man he ran away a second time, and enlisted in the Prussian service at Hamburg. But, being compelled to join a 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 condition 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 disappointment in love again interrupted his career; the world and life became odious to him, and he sunk into despondency. He was then 23 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 man, who now, encouraged by the academy of Copenhagen, protected by Bernstorff and Karstens, and assisted with the advice of Klopstock, then residing in Copenhagen, made rapid progress 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 Edda, 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 38 years old, having struggled for years with want, and suffering from the gout, which was produced by his irregular manner of life. A beautiful edition of his poems appeared soon after his death, in four volumes. (For further information respecting him, see Furst's *Briefe über die Dänische Literatur.*)

Ewald, John Lewis, doctor of divinity, and ecclesiastical counsellor, 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 instructer, 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 sollte der Adel jetzt thun?* (What shall the Nobility do now?), in which he advised them to surrender many

privileges, which ought to have been given up long before. In 1796, he accepted the office of preacher in Bremen, to which he was unanimously 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 unable to endure the labor of discoursing in the large and frequently crowded church, he accepted, in 1805, an invitation to Heidelberg, as professor of morals. After two years, he was invited to Carlsruhe (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; all 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 favorite study, from his early youth, 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 1755, 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 presbytery of Newcastle, Delaware. At the age of 26, Mr. Ewing was selected to instruct the philosophical classes in the college of Philadelphia. In the year 1759, he undertook the pastoral charge of the first Presbyterian congregation of that city, which he continued to exercise until 1773. In the interval, he collected materials for his excellent Lectures on Natural Philosophy, afterwards published. In the latter year, he was deputed to Great Britain, to solicit subscriptions for an academy, and there he formed an acquaintance with some distinguished men of science. In Scotland, the cities of Montrose, Glasgow, 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 favor of doctor Samuel Johnson, by his agreeable address and colloquial 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 *Encyclopædia Britannica*. His reputation 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, Sept. 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* eruptions, to distinguish them from *chronical* eruptions, which are only incidentally accompanied with fever (called, in medical language, *impetigines*). They include the small pox, measles, scarlet fever, rash, &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 Narses, the general of Justinian, emperor of the East, had entirely subdued the Goths and their allies in Italy (552—554), Justinian formed the middle part of Italy into a province of the Eastern empire, and gave the government of it to an officer called an *exarch*. Aistolphus, king of the Lombards, conquered Ravenna and the whole exarchate (752); 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 patriarch, who travels about in the provinces, and visits the bishops and churches.

Ex Cathedra (Latin; *ex*, from, and *cathedra*, from the Greek καθέδρα, chair); a phrase used in speaking of the solemn dictates or decisions of prelates, chiefly the popes, delivered in their pontifical capacity. Hence, in common language, the phrase is used for any decision, direction, order, &c., given 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 Sanzio superintendent 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 the regulations and the example of Raphael, order was introduced into the midst of this confusion. (See an account of his services in Fiorillo'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 an indiscriminate collection of curiosities. Flam. Vacca's excellent *Comm. de Monumentis Romanis suo et Majorum Ævo deprehensis*, in 1594, of which Carlo Fea has given an improved edition, in his *Miscellanea filologica, critica, et antiquaria* (Rome, 1790, vol. i, page 51 et seq.), is therefore rather an account of accidental discoveries, than of regular excavations. The business of excavation was not carried on extensively in Rome until recently. Before this, only a few tombs (those of Naso, 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. In this forum was found, in 1824, the first mile stone, from which all those upon the highways leading from Rome were numbered. In the *Campagna di Roma*, the villa of Adrian early attracted attention. The excavations at Gabii (1792) are also celebrated. Those at Velia, at Ostia, under the direction of Fea, those at Antium, as well as the examinations at Otricoli and at Friuli, near Udine (1817), have always been productive. Several statues 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 accidentally discovered at Brescia. The skilfully conducted excavations at Herculaneum and Pompeii (*see those articles*) have been very successful. The resurrection, as it were, of these cities, has encouraged the zeal of all countries. In France, the example of Peiresc has shown antiquarians how well that country can reward a diligent search. Montfaucon, Caylus, and, recently, Millin, 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 Famars, where vases have been found, with several thousand pieces of money, and two bathing-rooms, with painted walls. In Hungary, the excavations at Sabaria, and, in Germany, those on the Rhine, 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 treasures. The Mosaic at Italica 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 the ruins have been oftener described than explored. The tombs at Ilium were opened by count Choiseul-Gouffier, at the same time that Hamilton was examining those of Magna Græcia. 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 neighborhood of ruined edifices. The most important discovery made there was that of the Æginetan statues of Panhellenic Jupiter, and some specimens of architecture from Phigalia. Comparatively few specimens of ancient art have been found in Sicily. Baron Giudica, indeed, caused a whole town (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 Juvavium; 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 Köhler, 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 Pæstum, 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 that time, the title of *excellency* has, by general use, 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 the title of *your 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 U. States, the governor of Massachusetts is the only one who has the title of *excellency* by a constitutional provision. The president of the U. 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.*)

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 England*, vol. 3, p. 590.)

Excise may be said to be an inland duty, or impost, 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 family. Many articles, however, 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 18th century. (See *Consumption, Direct Taxes, Taxes,* &c.)

Excommunication; the exclusion of a person from a society, the 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 early Christian church, 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 treatises 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 in the Lord's supper, nor attend public prayers, &c.; no person 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 excommunication, nay, were 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 even whole cities, provinces and countries. An excommunication was the heaviest visitation which a 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, lost 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 obliged to yield, and received back his kingdom as a papal fief. 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 no where practised at the present time among Protestants. It would 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 the United States, immoral conduct among the members of Protestant sects 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*. (q. v.)

Execution, in law, is a judicial writ grounded on a judgment of the court, by which the execution 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 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 favor 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 a *capias ad satisfaciendum*, 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 *elegit*, by which the judgment is ordered to be satisfied by setting off all the goods and half the lands of the debtor, by appraisement, to the creditor, in satisfaction of his debt, whereas, by the *levari 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 some magistrate, and a record thereof, 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. In the U. States, the same execution is usually issued in favor of creditors, against the lands, goods and effects of debtors, and also against their bodies, it being ordered, that the officer should seize and sell the goods of the debtor for money to satisfy the judgment, or seize and sell, in some states, or set off at an appraised value in others, lands of the debtor, to the amount of the judgment, and, for want of goods, or of goods and lands, to imprison the debtor until he shall satisfy the debt, or be otherwise discharged by order of law, so that the same execution includes the *capias ad satisfaciendum* and *levari facias*. Many of the states make a distinction between a satisfaction from the goods and the lands of the debtor, by ordering his goods to be sold at auction, and the proceeds to be paid over to the creditor; but if the satisfaction is to be made out of the lands of the debtor, they are not sold for this purpose, but set off on an appraisement to the creditor. Some states heretofore enacted *stop laws*, as they were called, providing that the goods of the debtor, instead of being sold at auction for money, should, as in the case of lands, be appraised, and, if the creditor would not take the goods, either at the appraisement or at some other rate specified by the law, in satisfaction of his debt, his execution should be delayed for a certain time, on the debtor's giving security, or complying with the other conditions in such case provided by the laws. This was, in substance, extending to a levy on goods the same principle which had prevailed, and still prevails, in many states, in respect to lands.

Execution. (See *Death, Punishment of.*)

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, as adopted in many of the U. States, appoint any person of sound mind and discretion, though under some legal disabilities, as to contracting and transacting business in general, such as a married woman, or a minor. In some of the states, however, the appointment is limited to persons of the age of 21. The duties of executors, and those of administrators (q. v.), 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 on the estate has once been granted and commenced, 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, or if the one appointed had acted, or had 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, both in England and the U. States, 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 appoint-

ed, 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 there being some legal objection to her appointment. 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 generally vested in the magistrate as 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 probate office or court; to take care 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 dispositions of the law, 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 secure from any personal liability.

Exegesis (from the Greek ἐξήγησις); 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 exegesis. 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 theologians were ignorant of the languages, exegesis was very much neglected. But the study was revived by the reformation, and the last century shows a multitude of eminent exegesists, particularly in the Protestant church, and especially in Germany.

Exequies (funeral rites). In the Catholic church, this ceremony does not involve the idea of interment 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, a solemn piece of music executed (see *Requiem*), the church is hung with black, and other ceremonies of a similar nature, are performed.

Exercise. (See *Gymnastics.*)

Exeter (Indian name *Swamscot*); a post-town of New Hampshire, in Rockingham county, 14 miles S. W. by W. of Portsmouth, 15 N. N. W. of Newburyport, 18 N. N. E. of Haverhill, 40 S. E. by E. of Concord, 47 N. by E. of Boston; population in 1820, 2114. It is pleasantly situated at the head of tide-water and of navigation, on Exeter river, and is one of the most considerable towns in the state, and was formerly the seat of government. It contains a court-house, a jail, 2 banks, an academy, 3 printing-offices, and 3 houses of public worship, 2 for Congregationalists and 1 for Baptists. It is favorably situated for a manufacturing town, and contains several manufactories, and many valuable mills. Phillips Exeter

academy, in this town, was founded by the honorable John Phillips, LL. D., in 1781. It is one of the oldest, best endowed, and most respectable institutions of the kind in the United States. It has a principal, a professor of mathematics and natural philosophy, and a professor of languages, about 80 students, a library of about 700 volumes, and a handsome philosophical apparatus.

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 civil excommunication, or political proscription. 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 *Jews*.) 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 neighbors. But it sometimes happens, in the U. States, that persons convicted of minor offences are pardoned, on condition of leaving the state. Some time since, a number of young men of Würtemberg, convicted of political offences, were released, on promising to go to America.

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. Over such persons forms of conjuration 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 3d 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 5th 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 in the 16th century, 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 *Dean*.)

Exoteric. (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.

Expansion, 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 com-

mon 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 42°.5 of Fahrenheit's thermometer; when cooled down below 42°.5, it undergoes an expansion for every degree of temperature which it loses; and at 32°, the expansion amounts to $\frac{1}{160}$ of the whole expansion which water undergoes when heated from 42°.5 to 212°. With this more recent experiments coincide very nearly; for, by cooling 100,000 parts in bulk of water from 42°.5 to 32°, they were converted to 100,031 parts. The expansion 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. Dalton cooled water to the temperature of 5° without freezing, or 37°.5 below the maximum point of density; and, during the whole of that range, its bulk precisely corresponded with the bulk of water the same number of degrees above 42°.5. The prodigious force 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 60° 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 neglecting 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, in the doctrine of life annuities, 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:—

Age.	Expec.	Age.	Expec.	Age.	Expec.	Age.	Expec.
1	27.0	21	28.3	41	19.2	61	12.0
2	32.0	22	27.7	42	18.8	62	11.6
3	34.0	23	27.2	43	18.5	63	11.2
4	35.6	24	26.6	44	18.1	64	10.8
5	36.0	25	26.1	45	17.8	65	10.5
6	36.0	26	25.6	46	17.4	66	10.1
7	35.8	27	25.1	47	17.0	67	9.8
8	35.6	28	24.6	48	16.7	68	9.4
9	35.2	29	24.1	49	16.3	69	9.1
10	34.8	30	23.6	50	16.0	70	8.8
11	34.3	31	23.1	51	15.6	71	8.4
12	33.7	32	22.7	52	15.2	72	8.1
13	33.1	33	22.3	53	14.9	73	7.8
14	32.5	34	21.9	54	14.5	74	7.5
15	31.9	35	21.5	55	14.2	75	7.2
16	31.3	36	21.1	56	13.8	76	6.8
17	30.7	37	20.7	57	13.4	77	6.4
18	30.1	38	20.3	58	13.1	78	6.0
19	29.5	39	19.9	59	12.7	79	5.5
20	28.9	40	19.6	60	12.4	80	5.0

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.

Expectorants, in pharmacy; medicines which promote expectoration. Such are the stimulating gums and resins, squills, &c.

Expectoration; 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 are, 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; for nature is simple, and does nothing in vain. 2. Therefore, of natural effects of the same kind, the same causes are to be assigned, as far as it can be done; 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, impenetrability, mobility, the *vis inertiæ*, 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 aërial or other elastic fluid, by which it instantly throws off any 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, though wedges of wood, when wetted, will cleave 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 these particulars: 1. The immense velocity with which the aërial 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 four 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 obstacles 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 ball again is promoted by the sudden propagation 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 expansile fluid. These three take place in the greatest perfection where the electric fluid is concerned, as in lightning, earthquakes and volcanoes. (See *Steam.*)

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 over it, on the right, a figure denoting how often the number or magnitude has been multiplied by itself; e. g. $a^4 = aaaa = a, a, a, a$

$$9^3 = 9 \times 9 \times 9 = 729.$$

Ex post Facto, in law; something done after another; thus a law is said to be *ex 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 (*extractum*). 1. When chemists use this term, they generally mean the product of an aqueous decoction. 2. In pharmacy, 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, precipitates them. It precipitates 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 Pharmacopœia 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 decoction, 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.

Extrados; the outside of an arch of a bridge, vault, &c. (See *Architecture*, vol. i, page 336.)

Extravasation, in contusions, and other accidents of the cranium, is when one or more of the blood-vessels distributed on the *dura mater* are broken, whereby 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.

Exuviæ, 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 Angles.

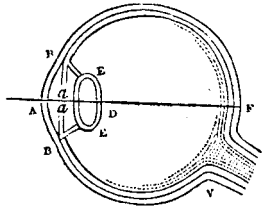
Eyck, Hubert van, a Flemish painter, considered as the founder of the Flemish school, was born in 1366, at Maeseyk. He was much distinguished by his paintings in distemper; and, after the introduction of oil-painting by his brother, he practised in that with equal success. An admirable piece of his, 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 Brügge*, or *John of Bruges*, from Bruges, the place of his residence, as the former name was given him from the place of his birth, Maeseyk, 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 14th century; an opinion favored by many circumstances. His elder brother, Hubert van Eyck (born about 1366), 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 times. 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 Adoration 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 pannels, 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 pannels, one is at Berlin in the collection of Mr. Solly, bought by the Prussian government. This affords the principal argument for the opinion lately started, 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 1420 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 splendor 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 abovementioned completed. He died in 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 life time, 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 aërial 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 au-

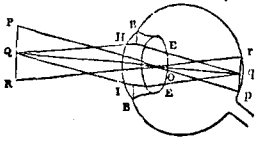
* At the same time with him, Pietro della Francesca and Paolo Uttella employed the linear perspective instead of the gold ground, but not in such perfection as he.

thor of the mode of painting on whole panes, with colors delicately blended, and yet so firmly fixed, that obliteration was impossible—an object before attained only by joining together (in Mosaic) several small panes of different colors. The influence 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 measure, the founder, does not yield in celebrity 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 faces, dresses, grouping, distribution of light and shade, are always superior, and the coloring 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 Antonello of Messina, Roger van Brugge, Hans Hemling and others, also the later masters, Albert Dürer, Luke of Leyden, Hans Holbein, Luke Kranach, &c. F. Waagen 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 humors, and also to the nose. Its form is nearly spherical, and would be exactly so, were not the fore part a little more convex than the remainder; the parts B F B, B A B, are, in reality, segments of a greater and less sphere. The humors of the eye are contained in a firm coat B F, B A, called the *sclerotica;* the more convex or protuberant part of which, B A B, is transparent, and, from its consistency and horny appearance, it is called the *cornea.* This coat is represented by the space which is contained between the two exterior circles. Contiguous to the sclerotica is a second coat, of a softer substance, called the *choroides;* this coat is represented by the next white space, and extends along the back part of the sclerotica to the cornea. From the junction of the choroides and cornea arises the *uvea,* B *a*, B *a*, a flat, opaque membrane, in the forepart of which, and nearly in its centre, is a circular aperture called the *pupil.* The pupil is capable of being enlarged or contracted with great readiness; by which means, a greater or less number of rays may be admitted into the eye, as the circumstances of vision require. In weak light, too few rays might render objects indistinct; and in a strong light, too many might injure the organ. Whilst the pupil is thus enlarged or contracted, its figure remains unaltered. This remarkable effect is thought to be produced by means of small fibres, which arise from the outer circumference of the uvea, and tend towards its centre; this circumference is also supposed to be muscular, and by its equal action upon the fibres, on each side, the form of the pupil is preserved, whilst its diameter is enlarged or contracted.—At the back part of the eye, a little nearer to the nose than the point which is opposite to the pupil, enters the *optic nerve* V, which spreads itself over the whole of the choroides like a fine net, and from this circumstance is called the *retina.* It is immersed in a dark mucus, which adheres to the choroides. These three coats, the sclerotica, the choroides and the retina, enter the socket of the eye at the same place. The sclerotica is a continuation of the *dura mater,* a thick membrane which lies immediately under the skull. The choroides is a continuation of the *pia mater,* a fine, thin membrane which adheres closely to the brain. The retina proceeds from the brain.—Within the eye, a little behind the pupil, is a soft, transparent substance, E D E, nearly of the form of a double convex lens, the anterior surface of which is less curved than the posterior, and rounded off



at the edges, E, E, as the figure represents. This humor, which is nearly of the consistency of a hard jelly, decreasing gradually in density from the centre to the circumference, is called the *crystalline humor*. It is kept in its place by a muscle called the *ligamentum ciliare*, which takes its rise from the junction of the choroides and cornea, and is a little convex towards the uvea. The cavity of the eye, between the cornea and crystalline humor, is filled with transparent fluid like water, called the *aqueous humor*. The cavity between the crystalline humor and the back part of the eye, is also filled with a transparent fluid, rather more viscous than the former, called the *vitreous humor*. It is not easy to ascertain, with great accuracy, the refracting powers of the several humors; the refracting powers of the aqueous and vitreous humors are nearly equal to that of water; the refracting power of the crystalline humor is somewhat greater. The surfaces of the several humors of the eye are so situated as to have one line perpendicular to them all. This line, A D F, is called the *axis of the eye*, or *optic axis*. The *focal centre of the eye* is that point in the axis at which the image upon the retina and the object subtend equal angles. This point is not far distant from the posterior surface of the crystalline lens, though its situation is probably subject to a small change, as the figure of the eye, or the distance of the object, is changed.—From the consideration of the structure of the eye, we may easily now understand how the notices of external objects are conveyed to the brain. Let P Q R, in the annexed figure, be an object, towards which the axis of the eye is directed; then the rays which diverge from any point Q,



and fall upon the convex surface of the aqueous humor, have a degree of convergency given them; they are then refracted by a double convex lens, denser than the ambient mediums, which increases the convergency; and if the extreme rays Q H, Q I, have a proper degree of divergency before incidence, the pencil will be again collected upon the retina, at *q*, and there form an image of Q. In the same manner, the rays which diverge from any other points, P, R, in the object, will be collected at the corresponding points, *p*, *r*, of the retina, and a complete image, *p*, *q*, *r*, of the object P Q R, will be formed there. The impression thus made is conveyed to the brain by the optic nerve, which originates there, and is evidently calculated to answer this purpose. Here it will be observed, that since the axis of the several pencils cross each other at O, the focal centre of the eye, the image upon the retina is inverted with respect to the object, and yet it furnishes the mind with the idea of its being erect. This is a difficulty that has produced considerable discussion amongst philosophers; and the most satisfactory explanation which can probably be given is, that experience *alone* teaches us what situation of an external object corresponds to a particular impression upon the retina. Some opticians, however, are unwilling to concede this point, and contend that the object is reflected from the retina to another substance, on which they are painted, and thus give to the eye exactly the construction of a Gregorian telescope. The following measure of the crystalline and cornea, were taken by doctor Gordon and doctor Brewster, from the eye of a female above 50 years of age, a few hours after death.

Diameter of the crystalline, . .	0.378
Diameter of the cornea, ...	0.400
Thickness of the crystalline, . .	0.172
Thickness of the cornea, . . .	0.042

Measures of the refractive powers of the humors of the same eye:—

	Index of Refraction.
Refractive power of water, . . .	1.3358
Ditto, of aqueous humor, . . .	1.3366
Ditto, of vitreous humor, . . .	1.3394
Ditto, of outer coat of crystalline,	1.3767
Ditto, of middle coat of ditto, .	1.3786
Ditto, of central part of ditto, .	1.3990
Ditto, of the whole crystalline,	1.3839

The range of the eye, or the field of vision, may be taken at 110 degrees.

Eyes of a Portrait.—The influence which the association 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. Doctor 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. (See also Bigelow's *Technology*, Pl. iii, fig. 3.) 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 happens is unlike that 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 canvass be transparent, the same effect takes place from the back of the picture.

Eye, in architecture, is used to signify any round 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 Dome; 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 *rhinanthaceæ*, 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 robins (or rope-bands), and the points or reef-line.

Eyelid. The eyelid is the external covering of the eye. Its 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 was 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, Preuss; a small town, about 28 miles distant from Königsberg, in Prussia Proper, with 1500 inhabitants, on the lake of Arschen, 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 12 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 incorporated 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 had been wounded; three French generals killed, and five wounded. The Russian killed were estimated at 12000, 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—neither 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. (See the beginning of vol. ii. of the *Memoirs of Savary, duke of Rovigo*, and Bothmer's *Map of the Battle of Eylau*.) According to Schöll (viii. 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.

Eynard; a gentleman distinguished for his great exertions in favor of the liberty of Greece. He is a banker at Geneva and Leghorn, and is descended from a French family, several members of which fled to Geneva in the times of the religious persecutions. He was born at Lyons, Sept. 28, 1775. In 1793, he fought in defence of his native city. When Lyons was conquered by the convention, his family fled to Rolle, in the Pays de Vaud. In 1795, in connexion with his brother, he

established a commercial house in Genoa, where he served as a volunteer when Massena besieged the city. In 1801, he contracted for a loan to the king of Etruria; and, at a later period, he received the lucrative office of farmer-general of the commerce of salt and tobacco in Tuscany, from the princess Eliza, wife of Baccioechi. (q. v.) In 1810, he was one of the deputies of Tuscany to Paris, and, in 1814, was present at the congress of Vienna. The grand-duke Ferdinand granted him letters of nobility, and sent him on a special mission to the congress of Aix-la-Chapelle. In 1819, Mr. Eynard was living at Geneva, where he displayed great hospitality, and, for several years, was one of the most effectual and ardent promoters of the Greek cause. He made very considerable advances, was at the head of collections for the Greeks, and quite lately (in 1830) succeeded in procuring a loan of one million and a half of francs for them at Páris.

Ezekiel; the third of the great prophets, a son of Buzi, of the race of priests. He was carried away, when young (about 599 B. C.), into the Babylonish captivity. Here he received the gift of prophecy, while he was among other captives, by the river Chebar. 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 the Idumeans and 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.

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 *Blaselaute* (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 *hacer*, and is now pronounced only *acer*. In the same way *fundus* became *hondo* (deep). *F*, in etymology, is altogether an unsettled sound, passing into *h*, and *v*, and *b*, 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 *h* 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 *fresh*, German *frisch* (pronounced *frish*), is from the Low-German *risch* (pronounced *rish*) and the German *rasch* (quick). The Eolians, finding the H aspirated, changed it into a sound without aspiration, and used, in order to indicate it, two Γ (gammas), one above the other which was the origin of the character F.

The Romans for some time used F inverted, thus, ⅎ, for V consonant, as TERMINAⅎIT for TERMINAVIT, or DIⅎI 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*, *faria*, *focas*, &c. This is always done by the Italians and Spaniards, as, *filosofia*. Klopstock, and some other Germans, attempted to introduce the same manner of writing, 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 φ with the Greeks, was branded upon the forehead of runaway slaves. It signified *fuga* and φευγή. *F* signified, as a number, among the Romans, 40; with a dash over it, 40,000. *F*, on engravings or pictures, stands for *fecit* or *faciebat* (made). In jurisprudence, *ff* signifies the *pandects*. This abbreviation originated in the early period of the art of printing, when no Greek characters had yet been cast, and *ff* was used for π, the first letter of πανδέκται. On medals, monuments, &c., *F* stands for *Fabius*, *Furius*, &c., *Filius*, *Felix*, *Faustus*, &c. *FF*, on Roman coins, means *flando*, *feriundo*. On French coins, *F* means the *mint of Angers*; on Prussian coins, *of Magdeburg*; on Austrian, *of Halle in the Tyrol*. *F*, with merchants, signifies *folio* (page). *F* often stands on documents for *fiat* (let it be done, granted, &c.). *Fl.* is the abbreviation for *florin*, or guilder; *fr.* for *franc*; *ff*, in German, for *folgende*, like *seq.* in English.

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.

Fabbroni, Giovanni, an eminent Italian philosopher, who distinguished himself by his attention to political economy, agriculture and physical science. He was secretary to the *Academia dei Georgofili*, director of the museum and cabinet of natural history at Florence, one of the forty members of the *Società Italiana delle Scienze*, Tuscan deputy 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 législatif* in France, director of bridges and highways (under the imperial government) for the department beyond the Alps, director of the mint at Florence, royal commissary 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 writings, which attracted much notice at the time of their publication, are remarkable not only for the striking facts, the sound maxims, and the extensive views in which they abound, but also for the impressive manner in which the opinions of the author are enforced. The best known of his works are his *Provvedimenti Annonarj*; his Discourses on National Prosperity; on the Equilibrium of Commerce, and the Establishment of Custom-houses; on the Effects of the Free Traffic in Raw Material; on Rewards for the Encouragement of Trade; on the Chemical Action of Metals; on the Value and Reciprocal Proportion of Coins; on the Scales and Steelyards of the Chinese; on the Palaces of Spain; and on the Ancient Hebrew People. He left behind him many learned memoirs, and a number of very valuable manuscripts. He died at Florence in 1823, aged upwards of seventy.

Fabii; an ancient and renowned family of Rome. One of the stories in ancient Roman history, is, that all of them who were able to bear arms, 306 in number, once fought together against the Vejentes, on the little river of Cremera (477 B. C.), and were killed, to a man.

Fabius Maximus, Quintus, surnamed *Cunctator* (the delayer), one of the greatest generals of ancient Rome, saved his country, when it was threatened with ruin after the defeat at Thrasymene, and Hannibal, with his victorious army, was advancing upon Rome. At this critical moment, Fabius took the command of the Roman legions as dictator, and, finding his own army dispirited, while that of Hannibal was numerous and formidable, he formed the plan of weakening and fatiguing the enemy by marches and delays, instead of risking the fortunes of the state upon the event of a single battle. Hannibal, who well knew the character of his formidable opponent, 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 *compel* 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 pre-

tence 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 already fallen into an ambuscade, and was on the point of being routed by the Carthaginian general, when Fabius arrived just in season to save him. Minucius, 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 Cannæ, 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 fulfil the agreement, he sold his own estates, in order to keep good his word. He died at a very advanced age, 202 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 opposition to history. The poet's description aims at beauty, his piece must please as a whole, and the occurrences must be so arranged and exhibited as to accomplish this end. He paints not the real, but the possible; not 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 practical rules of worldly prudence or wisdom, by imaginary representations drawn from the physical or external world. It consists, properly, of two parts: the 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; is 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. Herder, in his Scattered Leaves (*Zerstreüten Blättern*), 3d vol., is very full on this subject. He divides fables into —1. *Theoretic*, 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, snaps 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 unchangeable, 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 order from above. Thus the eagle carries, with her plunder, a coal from 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 nor 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 (Billpai or Bilpai), and the fables of the Arabian Lockman, are celebrated. (*See those articles.*) Æsop is well known among the Greeks, and was imitated by Phædrus among the Latin writers. Bodmer has published German fables of the time of the *Minnesinger*. Boner, 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 Waldis may be mentioned, in the 16th century. In the 17th, Gay among the English, and La Fontaine among the French, were distinguished. The writer last named made fable the vehicle of wit, and spoke the language of society. Lessing, Pfeffel, and others, united fable and satire in the sharp point of their epigram. Fables may have the form of narrative or dialogue.

FABLIER and FABLIAUX. (See *French Literature.*)

FABRE D'EGLANTINE, Philippe François Nazaire, was born at Carcassonne, in 1755. 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 accomplishments and poetical 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, 1771. Having afterwards gained the prize of the Eglantine at the Floreal games in Toulouse, he assumed the name of that flower as a surname. He now wrote several theatrical pieces, of which, however, only two, *L'Intrigue épistolaire* and the *Philinte de Molière* were successful. The latter is still considered one of the best character-pieces of the modern French stage. Of an ambitious spirit, he engaged with ardor 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 appeal, and was chosen a 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, Raphael, one of the most learned antiquarians of modern times, born 1618, at Urbino, in the papal dominions, devoted himself to the study of law in the school at Cagli, 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, he conceived a fondness for the study 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; after 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 13 years was employed in archæological 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 antiquarians—Menage, Mabillon, 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 favorite 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 Innocent XI, cardinal Gasparo Carpegna. From that time, he devoted himself wholly to antiquarian researches. His first works on this subject (his three dissertations on the Roman aqueducts and his *Syntagma de Columna Trajani*) received the approbation of all the archæologists except Gronovius, with whom he had a dispute of some bitterness about the meaning of certain passages in Livy. With equal erudition, Fabretti afterwards examined the bass-reliefs now in the Capitoline Museum, illustrative of the siege of Troy, and 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 archæo-

logical knowledge. Carpegna gave him the superintendence of *subterranean Rome*, as it is called, or the catacombs. The treasures which Fabretti 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 favor 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 superintendent of the secret archives in the castle of St. Angelo, which office he held till his death, in 1700. Several treatises of Fabretti did not appear till after his death. An account of his life, by cardinal Rivieri, may be found in Crescimbeni's Lives of illustrious Arcadians, and another by the abbé Macotti, in Fabroni's Lives of illustrious Italians. Fabretti's rich collection of inscriptions and monuments was purchased by cardinal Stoppani, and may be now seen in the ducal palace at Urbino. It is related, that Fabretti's horse, on which he made his excursions in the neighborhood 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. Fabretti was received among the Arcadians under the name of *Jasitheus* (the Greek for *Raphael*), under which name he carried on a controversy with Gronovius.

Fabricius, Caius (surnamed *Luscinus*), a pattern of ancient Roman virtue, in his fearlessness, integrity, moderation and contempt of riches. After having conquered the Samnites and Lucanians, and enriched his country with the spoils, of which he alone took nothing, he was sent on an embassy to Pyrrhus, king of Epirus, to obtain the ransom of some Roman prisoners. Pyrrhus wished to bribe Fabricius, 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 Fabricius, 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 (279 B. C.), Fabricius sent word to Pyrrhus, that his physician offered to poison him for a certain sum of money. "Sooner," said Pyrrhus, "can you turn the sun from its course, than Fabricius from the path of honor." In gratitude for the service, he released the Roman prisoners without ransom. In the year 279 B. C., the battle at Asculum was fought, in which Pyrrhus was victorious, but lost the best part of his army. 275 B. C., Fabricius was chosen censor, with Æmilius Papus, and removed Cornelius Rufinus 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 honor 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 versed in almost every department of human knowledge, possessed an incredible extent 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 gymnasium at Hamburg. In 1719, the landgrave of Hesse-Darmstadt offered him the first professorship of theology at Giessen, and the superintendency 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 Græca*, improved by Harles. No less useful are his *Bibliotheca Latina*, *Bibliotheca media et infimæ Ætatis*, *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. (See Schröckh's *Lebenbeschreibungen*, 2d vol., p. 344 et seq.)

Fabricius, John Christian, one of the most celebrated entomologists of the 18th century, was born at Tundern, in the duchy of Sleswic, 1742. After he had finished his academic course at Copenhagen at 20 years of age, he pursued his studies at Leyden, Edinburgh, and Freyburg, in Saxony, and under Linnæus 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 Linnæus, applied to the developement 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 he endeavored to persuade Linnæus to make use of it in the new edition of his *Systema Naturæ*, 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 favorite 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 Linnæus. From this 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, made acquaintance with the learned, and described with 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 later writings are inferior to the first. The foundation he had assumed was excellent; it could not, however, lead him, as he supposed, to a system of nature, but only to a natural method. He died March 3, 1808. His autobiography may be found in the *Kieler Blättern*, I. I., 1819.

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 Bandinelli, 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 1766. 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 labors. He travelled abroad, 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 (*Vitæ Italorum Doctrina excellentium qui Sæculo XVII et XVIII floruerunt*) 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*.)

Façade 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*.)

Facciolato, 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 *Calepin*, from the name of its author, the monk Ambrosius Calepinus. His pupil, Forcellini, assisted him in the undertaking, and the work was completed in two

vols. fol., between the years 1715 and 19. 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 immense undertaking occupied them both for nearly 40 years. Facciolato directed the work, which was almost entirely executed by Forcellini. (q. v.) With the same assistant, and some others, he superintended a new edition of the lexicon of Schrevelius, and the *Lexicon Ciceronianum* of Nizoli. He left also many Latin discourses, which are characterized by their Ciceronian elegance of style, but differ from their model by a precise brevity. He also completed the History of the University of Padua, which had been brought down to 1740 by Pappadopoli. He died 1769. The lexicon of Facciolato 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, 1828), published by Baldwin and Cradock, and Pickering, in 2 vols. 4to, containing upwards of 3000 pages, with many highly useful appendices. An edition is now publishing in Germany, the first in that country, edited by G. Hertel and A. Voigtländer, published by Schuman, at Schneeberg, in Saxony.

Face, the front part of the head, the seat of most of the senses, is composed of the forehead, the eye-lids and eyebrows, 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 32 teeth, is composed of 14 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, being articulated with the basis of the skull. The other bones are firmly joined together, and incapable of motion. The character of each individual is strongly marked by the conformation of the countenance. (See *Physiognomy*.) The face also 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 base of the skull, from the great occipital cavity across the external orifice of the ear 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. In apes, this angle is only from 45° 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°.

Fachingen-Water (in German, *Fachinger-wasser*); a mineral water, from a spring near the village of Fachingen, in Nassau, Germany, discovered in the middle of the last century. It is not a watering place, but the water is sent abroad, and keeps very well. In 1803, not less than 300,000 bottles were sent away. The water is acid, sprightly, saline and very agreeable.

Facial Angle. (See *Face*.)

Facsimile (from the Latin *fac*, make, and *simile*, similar); an imitation of an original in all its traits and peculiarities; a copy as accurate as possible. Thus facsimiles of old manuscripts, or of the handwriting of famous men, or of interesting documents, are made in engraving or lithographic prints. The object of facsimiles is various; in the case of old manuscripts, they are intended to show the age of the MS by the nature of the characters.

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 divisible only 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*.

FADEN; the German measure corresponding to the *fathom* (q. v.), equal to a *klafter*, or six feet.

FAENZA (anciently *Faventia* and *Falentia*); a town in the States of the Church, in Romagna; 20 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, 28 parish churches, and 20 convents. It is noted for its potteries (see *Faïence*), and has some manufactures 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 1795, 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 himself by his spirit and firmness, during the invasion by Louis XIV. With sir William Temple, he laid the foundation of the peace of Nimeguen, 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 Temple, Wicquefort, and Burnet.—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 burnt 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 house of Orange, even in the times of their greatest adversity, has filled the most important stations, and conducted the most difficult negotiations. In 1814, he signed the treaty of peace between Great Britain and the Netherlands.

FAHLERZ. (See *Copper*.)

FAHRENHEIT, Gabriel Daniel, born at Dantzic about the end of the 17th century, known for his arrangement of the thermometer and barometer, 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 Dantzic in the winter of 1709, and which he could always produce by mixing equal quantities of snow and sal-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 was prevented from completing it by death. The changes 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.

FAÏENCE, 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 Faënza, in Romagna, where it is said to have been invented in 1299. A fine sort of pottery was manufactured there at that period, which the Italians called *Maiolica*, 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 *Maiolica* reached its highest perfection between 1530 and 1560. The king of Würtemberg possesses a rich collection of it. The modern Faïence appears to have been invented, about the middle of the 16th century, at Faënza, and obtained its name in France, where a man from Faënza, having discovered a similar kind of clay at Nevers, had introduced the manufacture of it. Towards the end of the 17th century, the city of Delft, in Holland, became famous for the manufacture of Faïence, which was called also *Delft-ware*. It does not, however, resist fire well. The English stone ware, made of powdered flint, has some resemblance to the Faïence, but is, in reality, entirely different.

FAILURE. (See *Bankrupt*.)

FAINÉANT (*French*, doing nothing). This word is used not unfrequently in connexion with the word *roi*. *Roi fainéant* signifies a king who allows his ministers to rule, without descending to the vulgarity of attending to business himself. It is a natural, and, in fact, unavoidable result of human weakness, that, wherever persons are marked out from their birth as future rulers over whole nations, without regard to their capacity or disposition, that *rois fainéants* should form the great majority of monarchs. According to a calculation which we once had occasion to make, it appeared that, of fifty rulers, about forty-five were *rois fainéants* (good and bad); two actively good, and three actively bad; and some such proportion would probably be found in every class of men not compelled to exert themselves.

FAIR, in England; 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. It is incident to a fair, that persons should be free from being arrested in it for any debt, except that which has been contracted in the same, or, at least, promised to be paid there. These fairs are usually held twice a year; in some places only once a year; and, by statute, they shall not be held longer than they ought by the lords thereof, on pain of their being seized into the king's hands, &c. Also proclamation is to be made, how long they are to continue; and no person shall sell any goods after the fair is ended, on forfeiture of double the value, one fourth to the prosecutor, and the rest to the king. There is a toll usually paid at fairs, for the privilege of erecting stalls, from which to sell goods, as well as booths, either for entertainment or pastime.

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 great numbers of people, and thus, probably, 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 Sinigaglia in Italy, at Lyons and Beaucaire in France, Bolzano in the Tyrol, Zurzach in Switzerland, Niznei-Novgorod in Russia, Warsaw in Poland, &c. But fairs cannot now have the importance which they formerly had, because the communication between different parts of a country has become so easy that merchandise is much oftener ordered directly than formerly.

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 Fuystone, in Knaresborough forest, led the life of a retired country gentleman, devoted to literary pursuits. He died about 1632. Fairfax's reputation rests on his version of Tasso's Godfrey of Bouillon,

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 Muses' 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 Ferdinando lord Fairfax, to whose title and estates he succeeded in 1647. A strong predilection for a military life induced him to quit Cambridge, and, at an early age, to volunteer with the lord Vere, under whom he served 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 1643, at Adderton Moor. At 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, quelling all opposition as he advanced. 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 pretext 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 more than suspected of disaffection, till, being ordered to march against the revolted Scotch 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 was formally reconciled to that monarch. His leisure he 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. 1699. He died in 1671.

Fairfield; a post town, port of entry, and capital of Fairfield county, Connecticut, on Long Island sound; 21 W. S. W. New Haven, 54 E. N. E. New York; lon. 73° 39′ W.; lat. 41° 11′ N.; population, 4151. It is a large, pleasant and excellent agricultural township, comprising three parishes. There are three harbors, Black Rock, Mill river, and Saugatuck harbors. Black Rock is one of the best in the sound, having 19 feet water at the summer tides. Considerable shipping belongs to the district, and is employed in the coasting trade. There are four villages, Fairfield, Greenfield hill, Saugatuck, and Mill river. Fairfield village is pleasantly situated, and contains a court-house, a jail, an academy, and Congregational meeting-house. Greenfield hill is celebrated for its beautiful situation, on an elevation 3 miles north of Long Island sound. It contains a Congregational meeting-house and an academy. (For the population in 1830, see United States.)

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 at 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 it 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 a desire to solve the riddle of the sometimes 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 Arabians, had stories of a country inhabited by fairies. The poetical belief in the existence of fairies, was introduced into France in the 12th 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 every where, 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 an important part in the romances of chivalry and the *fabliaux*, 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, and so fixed in the popular belief, that they did not appear extraordinary or unnatural when brought upon the stage by Shakspeare. 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 17th century, the true fairy tales first became popular, and here also the Italians appear to have taken the lead. The *Pentameron*, by Basilio, enlarged by Alessio Abbatutis, 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 and Geneva, 1786, 37 vols.), the last volume of which contains an account of the authors. The principal critics 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 W. coast of North America, 100 miles S. E. Admiralty bay; lon. 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., supposed by the vulgar in England to be traced by the fairies in their dances. There are two kinds: one of about seven yards in diameter, containing 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 endeavor 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 unchangeably fixed in this direction. They make a vow of poverty, and 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-torment 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 *Anachorites*, 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 1762. It was dedicated to Edward, duke of York, by whose patronage the author was appointed a midshipman, in 1763. In 1769, 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, for Venice, cut short by the catastrophe, 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.

FALCONET, Stephen Maurice; a celebrated French sculptor of the 18th century. He was born in humble life; and, displaying a natural taste for the fine arts, he was assisted in his studies by Lemoine. Catharine 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 12 years. He wrote notes on the 34th and 35th 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.

FALCONRY. Falconry is a very old amusement in Europe and Asia. In the middle ages, it was the favorite 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 Déduits*), cited by Curne de Sainte-Palaye, 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 caress her, to put on the hood, and to place her gracefully on the wrist of his mistress. In Germany, falconry was honored 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 labor of war, and wrote a work on falconry, to which notes were added, by his son, Manfred of Hohenstaufen (*Reliqua Librorum Fred. II. de Arte venandi cum Avibus*, edited by J. G. Schneider, Leipsic, 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 fiefs called *Habichtslehnen* (hawk tenures), and, as early as the 14th 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 4000 livres, and had under him 15 noblemen and 50 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 establishment, which 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 favors by the king, and enabled to keep 60 horses for his falconry alone. There was an old rivalry between the falconers and the hunters. When 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 favor until the seventeenth century; but the invention of fire-arms gradually superseded it. In England, falconry was also in great favor, 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. The falcons are taught to fasten themselves on the heads of these creatures, and to peck at their eyes, which checks them until the hounds can come 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 30 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.

Falieri, Marino, doge of Venice in the middle of the 14th 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, in Byron's tragedy of Marino Falieri, the plot of which is taken from the following incidents in Falieri'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 revenge himself by some lines which were 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, Falieri resolved to take a fearful revenge on the whole body of the aristocracy, whom he deeply hated, and formed a conspiracy to murder 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, Gradenigo, 1297, is given by Daru, in his History of Venice. A play has been written on the same subject by Délavigne, 1829.

Falisci; a people of Etruria, said to have been originally a Macedonian colony. An anecdote of Plutarch respecting them has been often repeated, 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 to surrender. Camillus heard 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 street, by the light of the lamps, and, when 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 16 years, he succeeded in getting into a school, pre-

paratory 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, at a large 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 *Gräber von Kom*, and *Die Gebete*, both full of brilliant wit. They were followed, during six successive years, from 1797 to 1803, by the *Taschenbuch für 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 February 14, 1826.

Falkirk; a town and parish of Scotland, near the great canal, between the rivers Forth and Clyde. Falkirk is memorable in history for a battle fought, in its neighborhood, between Edward I of England, and the Scots, commanded by Cumyn, grand steward of Scotland, and sir William Wallace. The Scots were defeated with great slaughter. In January, 1746, the royal army was defeated near Falkirk, by the adherents of the house of Stuart. Population of the parish 11,536. 24 miles west of Edinburgh.

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 Belgia*, *New Islands of St Lewis*, and *Mallouines*; but the name of *Falkland* has generally prevailed. They consist of two large islands, with a great number of smaller ones surrounding them. They are mountainous and boggy. Besides the names above mentioned, they have also been called *Pepys' Islands*, and *Sebald de Wert's Islands*. Lon. 56° 30′ to 62° 16′ W.; lat. 51° 6′ to 52° 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 harbor of Port Louis, formerly called *Soladad*, affords a fine anchorage for vessels of any burden, in all winds, and is very easy of access. It is therefore convenient for whale ships to water, &c. (See *National Gazette*, Aug. 12, 1830.)

Falling Star, in meteorology; a phenomenon that is frequently seen, and which has been usually supposed to depend on the electric fluid. Sir 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 obstruction, pressure ensues; if the tendency is 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 too much, were found to reach the ground at nearly the same time. Galileo eventually proved, when professor in Padua, 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 the spaces passed through, 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 16 feet. In order to ascertain, therefore, the space h, through which a body would fall in any other number of seconds t, we have the equation $1 : t^2 :: 16 : h$. Supposing, for example, $t = 3$, we have $h = 144$; i. e., in three seconds, the body falls through 144 feet. For a convenient means of making experiments of this kind, Atwood, an Englishman, has invented an apparatus, which is known under the name of *Atwood's machine.* Mr. Benzenberg, a German, has added much to the better understanding of this part of natural philosophy. (See *Benzenberg.*)

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* from Gabriel Fallopius (q. v.), a physician of Italy, in the 16th 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 15th 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 surgery, anatomy and the *materia medica*, at Padua, where he remained till his death, in 1563. The principal work of Fallopius is his *Observationes Anatomicæ* (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 fœtus; and his account of the Fallopian tubes in females has perpetuated his name.

Fallow Land is ground that has been left untilled 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 animal dungs, 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 succession of the same crops tends to impoverish the soil, 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. There is a good harbor 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 harbor. On the opposite side is St. Mawe's castle. A considerable fishery of pilchards is carried on here. But the town derives its chief importance from being the regular station of the packet-boats, which carry foreign mails to all parts of the world. Population, 2543. 95 miles S. W. Exeter. Lon. 5° 4′ W.; lat. 50° 9′ N.

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 ill disposition of their parts, cannot be accurately 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 com-

mon 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 *Fastolf*). One of the most original dramatic characters which Shakspeare's masterhand has painted, is his sir John Falstaff, the boon companion of the dissipated Henry prince of Wales (afterwards king 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 Juliet's loveliness, and the philosophical 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 sensualists, but overflowing with wit and good humor. 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 full of resources for allaying the storm which it has excited. The dramatic world cannot furnish his equal. He is universally entertaining. His impudence and selfish, sensual philosophy are allayed with such exuberance of wit, that they make us laugh in spite of the contempt and disgust which they excite. Falstaff is a bold personification of qualities and dispositions 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 relished.

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 60 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 Nyekioping and Stubbekioping. Lon. 12° E.; lat. 54° 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 rumor. 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. Loquacious 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 day-time, 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 ruined 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 compelled by magic skill, and 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 Saône, and was never seen afterwards. Paracelsus was believed 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 (το φανάρι), in Constantinople; particularly the noble Greek families resident there since the times of the Byzantine emperors. The dragoman, or interpreter of the Porte, is taken from their number. From 1731 to 1822, the Porte also chose from their number the hospodars of Moldavia and Walachia. Till 1669, the office of dragoman had been filled by Jews and renegades. In that year, Mahomet IV, for the first time, employed a Greek, Panayotoki, as grand interpreter. (See Ranke's *Fürsten und Völker*, &c., vol. i, under the division *Diversion über die Griechen.*) The power of the influential Fanariots, soon increased so much, that, after the cruel death of the last native hospodar of Walachia, Bassaraba Brancareo, in 1731, a

Greek, Mavrocordatos, 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, discloses, in his *Essai sur les Fanariotes* (Marseilles, 1824), the intrigues of those Fanariot upstarts, 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.

Fandango, El; an old Spanish dance, which originated most probably in Andalusia, a province of the south of Spain. Foreigners are very much astonished and not less offended, when they see this dance for the first time; however, few fail to become reconciled to it. It proceeds gradually from a slow and uniform to the most lively, but never violent motion. It is said, that the court of Rome, scandalized that a country renowned for its faith should not have long before proscribed such a profane dance, resolved to pronounce a formal condemnation of it. A commission was appointed to examine into the matter, and the fandango was prosecuted *in forma*. The sentence was about to be pronounced, when one of the judges observed, that a criminal could not be condemned without being heard. A couple of Spaniards were brought before the assembly, and, at the sound of proper instruments, displayed all the graces of the fandango. The judges were so much excited that their severity abandoned them; their austere countenances began to relax; they rose, and their arms and legs found their former suppleness. The hall of the grave fathers was thus changed into a dancing-room, and the fandango was acquitted. 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 *intention* is no more than lightly marked; 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; but 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 manchegas* 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 (*castañuelas*).

Faneuil Hall; an old building in the northern part of Boston. The Tennis-court in Paris; the Tellsplatte in Switzerland, where Tell landed, and pushed back the boat with Gessler; the height of Rütli, where the Swiss confederates swore to deliver their country; the hall in the town-house of Prague, where the imperial counsellors were thrown from the window by the deputies of the oppressed Bohemians; Faneuil hall, and the state house in Philadelphia, where the declaration of independence was signed—are spots dear to the descendants of those whose efforts and exposure in the cause of liberty are therewith connected. Faneuil Hall is often called the *cradle of American liberty*, as the scene of many of the earliest debates and resolves in opposition to the oppressions of England. The original building, commenced in 1740, was given to the town of Boston by Peter Faneuil for a town-hall and market-place. It has been materially changed since that time. At present, the great hall is 76 feet square and 28 feet high, with galleries. A full length picture of Washington, by Stuart, ornaments the west end of the hall. The neighboring market-house, the most splendid in the United States, received its name from this hall. It is 585 feet 9 inches long, 50 wide, wholly built of white granite, with a fine cupola, and porticoes with columns of the Doric order. The corner stone was laid April 27, 1825.

Fanfare (*French*); a short, lively, loud and warlike piece of music, composed for trumpets and kettle-drums. Also small, lively pieces, performed on hunting horns,

in the chase. From its first meaning is derived *fanfaron*, a boaster, and *fanfaronade*, boasting.

FAN-PALM; the talipot tree or great fan-palm (*corypha umbraculifera*), is a native of Ceylon, Malabar and the East Indies. It attains the height of sixty or seventy feet, with a straight, cylindrical trunk, crowned at the summit by a tuft of enormous leaves, and is one of the most magnificent of the whole tribe of palms. These leaves are pinnate-palmate and plaited, separating near the outer margin into numerous leaflets, and united to the trunk by ciliate-spinous leaf-stalks; they are usually eighteen feet long, exclusive of the leaf-stalk, and fourteen broad; a single one being sufficient to protect fifteen or twenty men from the rain. When this palm has reached the age of thirty-five or forty years, it flowers, a long, conical, scaly spadix rising to the height of thirty feet from the midst of the crown of leaves, and separating into simple alternate branches, which, at the base, extend laterally sometimes twenty feet, the whole covered with whitish flowers, and presenting a most beautiful appearance. The fruit is very abundant, globose, about an inch and a half in diameter, and requires fourteen months to ripen, after which the tree soon perishes, flowering but once in the whole course of its existence. The inhabitants of those countries where it grows make use of the leaves for umbrellas, tents, or for covering their houses; and the Malabar books are formed of the same material, on which lasting characters are traced by means of a sharp-pointed iron style, which penetrates the superior epidermis. The pith, after being pounded, is made into a kind of bread, which is of great use in times of scarcity. Several other palms, whose leaves, when they first appear, are folded together like a fan, and afterwards spread open in a similar manner, are commonly called *fan-palms*, particularly the *chamærops humilis*, a species destitute of a stem, and inhabiting the south of Europe and north of Africa.

FANS. The Greeks were well acquainted with fans, as an article of luxury. From a passage in the Orestes of Euripides, it appears that the Grecian fans were introduced from the East, that they were of a circular form, and were mounted plumes of feathers. Dionysius of Halicarnassus describes the courtiers of Aristodemus, at Cumæ, as attended by females, bearing parasols and fans (σκίαδια καὶ ῥιπίδας). Plautus mentions *flabelliferæ* 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 aliquo*). 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 in 1635, by Charles I, 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 Breda, 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 translations of the Lusiad of Camoens, the Pastor Fido of Guarini, the Odes of Horace, and the fourth book of the Æneid into English verse, and Fletcher's Faithful Shepherdess into Latin. Among his posthumous writings, printed in 1701, is his correspondence during his embassies to the courts of Lisbon and Madrid, and some occasional poems, with a life of the author prefixed.

FANTASIA (*Italian*); the name generally given to a species of composition, supposed to be struck off in the heat of imagination, and in which the composer is allowed to give free range to his ideas, and to disregard those restrictions by which other productions are confined.

Some writers limit the application of this term to certain extemporaneous flights of fancy; and say, that the moment they are written, or repeated, they cease to be *fantasias*. This, they add, forms the only distinction between the *fantasia* and the *capricio*. The *capricio*, though wild, is the result of premeditation, committed to paper, and becomes permanent; but the *fantasia* is an impromptu, transitive and evanescent, exists but while it is executing, and, when finished, is no more.

Fantin, or Fantee; a country of Africa, on the Gold coast, which extends about 90 miles along the shore of the Atlantic, and 70 inland. The inhabitants are called *Fantees*, and are 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. European nations trade here for gold and slaves. The Fantees are bold, cunning and deceitful. Their government is aristocratic. Their chief is a supreme judge or 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 12 miles up the country. Lat. 5° 10′ N.

Fantucci, count, an Italian author, and the first magistrate of Ravenna, was born there in 1745, of one of the most respectable families. The memory of the former splendor of his native place, and the sight of its decay, excited his attention to the causes of such a change, and he addressed a memorial 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 neighborhood of Ravenna, afforded an opportunity for the display of his sagacity and his benevolence to the fullest extent. After he had done every thing 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 *arlecchino, scaramuccio*, &c.; the Germans their *Hanswurst, Kasperle*, &c. The French *farce* is derived from the Italian *farsa*, this from the Latin *farsum*, stuffed, signifying, therefore, a mixture of different things. Adelung says, that, in the middle ages, *farce* signified, in German, certain songs, which were sung between the prayers on occasions of religious worship; so that *farce*, in respect to comedy would originally signify an interlude (*intermezzo*). According to the abbé Paolo Bernardi, a Provençal, it is derived from *farsum*, 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 9th year, he was sent to the university at Braga, where he made great progress in the languages and in philosophy. In his 14th 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 *Albania* 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 again to Madrid, and devoted himself entirely to literature, with such ardor as to hasten his end. He died at the age of 59. Of his writings the best are—*Discursos morales y politicos* (Madrid, 1623—26, 2 vols.); *Comentarios sobre la Lusiada* (Madrid, 1639, 2 vols. fol.); *Epitome de las Historias Portuguesas*; and afterwards *El Asia*, *El Europa*, *El Africa* and *El America Portuguesa*, each a separate work, the last never printed. We have also a collection of his poems called Fountain of Aganippe (*Fuente de Aganipe, Rimas varias*, 1644—46). His style is pure and strong, and his descriptions full of vigor.

Farina. (See *Starch*.)

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 instruction in music from his father, and afterwards studied

under Porpora, whom he accompanied on several journeys. At the age of 17 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 1728, 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 nature. Farinelli took this hint, and delighted his hearers as much as he had before astonished them. In 1734, he went 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 sung 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 hard heart of the cruel tyrant. Senesino, forgetting his character, ran up to his prisoner, and affectionately embraced him. In 1737, 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 sung 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 adjoining the apartment of 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 shaved, and to appear in the council. From this moment the disease of the king yielded to medicine, and Farinelli had all the honor of his cure. This was the foundation of his unlimited favor. 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 honored him with their favor. After enjoying the highest honors in Spain for 20 years, he was obliged to return to Italy. He built a country house in the neighborhood of Bologna, with the inscription *Amphion Thebas, ego domum.* Here he collected the most extensive musical library ever yet seen, and induced P. Martini to undertake his History of Music. He died 1782, having enjoyed, in a happy old age, the love of his fellow citizens, and received many marks of respect from foreign connoisseurs. "He possessed," says doctor Burney, "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 hearer, 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 rudiments of education there, he became a student at Emanuel college, Cambridge, where, in 1760, he was appointed classical tutor. He applied himself particularly to old English literature. In 1766, he published a well-written and well-received Essay on the Learning of Shakspeare, in which he maintains that the bard obtained his knowledge of ancient history and mythology from translations, and not from original classical authors. This essay obtained a flattering notice from doctor Johnson. In 1767, he was appointed 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 Emanuel college. He was afterwards made principal librarian to 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 residentiaryship of St. Paul's, which he exchanged for his prebend. He published but little. He assisted many

authors, in various works, for which he received their public acknowledgements and thanks. Doctor Farmer died at Cambridge, after a long protracted illness, Sept. 8, 1797, aged 62 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 (*traites*), the import duties at Paris, those on the stamping of gold and silver, &c., on its own account. The duties on salt were first raised 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 engagements 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 favorites of former kings had obtained possession by purchase, donation, or other means, he made large additions to the royal revenues. In 1728, the government united several individual leases into the *ferme générale*, which, after the lapse of six years, was renewed by public auction, with a company consisting of 60 members. In 1789, the number of farmers-general was 44, who paid a rent of 186 millions. They composed a kind of court of finances, which, in 11 different deputations, administered the various objects of their contract, the appointment 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 evidently 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 management of the finances came into his hands, the nation had to pay 150 millions, while the treasury received only 30 millions. And, indeed, if Necker'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 national feeling, which contributed so much to the eruption of the revolution, must be 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 difficulties 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 duties paid on these articles. Necker observes, in the chapter on the wealth accumulated by the financiers (*De l'Administration des Finances*, III, ch. 12), that the indignation of the people at such duties is founded upon a just moral feeling, though he expresses himself with great lenity and precaution on this head. The people saw clearly that the wealth of the financiers (among whom must be reckoned, besides the collectors-general, the directors of the finances, which were administered by the government itself, the treasurers and bankers of the court, but particularly the farmers-general) was amassed without any merit on the part of the principal persons. 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 favor 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 rigor 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 commonly chose the season the most inconvenient to the country people, and then proceeded against them, confiscating 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 distrainings, presented daily to the eyes of the people the image 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.

FARNESE; 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 church and the republic of Florence many eminent generals, among whom was Pietro Farnese, to whom the Florentines were indebted for an important victory over the people of Pisa. Pope Paul III, a Farnese, bent on the aggrandizement of his family, conferred 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 Benvenuto Cellini. The pope requested the emperor Charles V to grant to his son the duchy of Milan, then in dispute between the emperor and France. After having offered Charles large sums in vain, he resolved to erect Parma and Piacenza, which Julius II had conquered from Milan, into a duchy, and, in August, 1545, bestowed it upon his son. Pietro proceeded to Piacenza, where he built a citadel, and commenced his tyrannical reign 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. Thirty-seven conspirators entered the citadel under pretence of visiting the duke, and secured the entrances. Giovanni Anguissola broke into the apartment of the duke, who, enfeebled by the most infamous diseases, was unable to make any resistance, and thus fell by the dagger of his enemy. Gonzaga took possession of Piacenza in the name of the emperor, and promised the reformation of all abuses.—Ottavio Farnese, the son and successor of Pietro, was then at Perugia with Paul III. Parma declared itself in favor of Ottavio, who took possession of it with the papal troops, but found himself, singly, too weak to attempt the capture of Piacenza. He therefore agreed upon an armistice with Gonzaga, and in the meantime endeavored to secure the assistance 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 1550, 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 honorable treaty. The services which his wife and his son Alessandro rendered to the Spanish government, gained him the favor 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, with whom she had lived but little, and then retired to Abruzzo. Ottavio died in 1586, after enjoying thirty years of uninterrupted peace, which he had employed in correcting the disorders of the preceding governments, and promoting the happiness of his subjects.—Alessandro Farnese, eldest son of Ottavio and Margaret, 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. Inclination, 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 Lepanto. In 1577, Philip II called him from Abruzzo, where he resided with his mother, to lead back to don John the Spanish troops, which the latter had been obliged to dismiss from Flanders, where the situation of the Spaniards was becoming desperate. Don John, who had been a long time infirm, died that year, and Alessandro was made governor. He recovered Maestricht and several other cities, and succeeded in reconciling the Catholic part of the insurgents to the Spanish government. The Protestants, however, formed the union of Utrecht, 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 received 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, skilful 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 mutinous and unpaid army, Alessandro kept in check 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 47th year.—Ranuzio I, his eldest son, succeeded him as duke. He inherited none of the heroical qualities of his father, but was gloomy, severe, suspicious and avaricious. 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 confiscated their estates (May 19, 1612). This unprecedented cruelty roused the indignation of many of the Italian princes, and the death of Vincenzo Gonzaga, duke of Mantua, alone prevented the breaking out of a war. He imprisoned his natural son Ottavio, who had acquired the favor of the nation, and left him to perish in cruel confinement. Ranuzio 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 1646), possessed considerable talent for satire, a good deal of eloquence, and still more presumption and vanity. The ambition of shining in arms involved him in wars with Spain and pope Urban VIII, to whom he was deeply in debt. His excessive corpulence rendered him wholly unfit for war, of which he was so fond.—Ranuzio 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 favorites. One of these, Godefroi, a French teacher, whom he had created prime minister, assassinated the new bishop of Castro, whom Farnese was unwilling to acknowledge. Indignant at this crime, pope Innocent X demolished Castro, and Godefroi, defeated by the papal troops, lost successively the favor of his master, his estates and his life.—Odoardo, the eldest son of Ranucci, was suffocated by his excessive corpulency. Of his two sons Francesco and Antonio, the former succeeded him. His extreme corpulency 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 corpulency at the time of his marriage, and his whole reign was a series of insults and humiliations. After his death, 6000 Spaniards took possession of Parma and Piacenza, in the name of don Carlos.

Farnesina, La, or Casino Farnese; 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 Petrucci, for an eminent banker, Agostino Chigi. 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 pictures 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 of Messina; a strait of the Mediterranean, between Sicily and Calabria, about five miles wide, remarkable for the tide's ebbing and flowing every six hours. The kingdom of the Two Sicilies is divided into *dominj al di qua del Faro* (lands this side the Faro), and *dominj al di la del Faro* (lands on the other side of the Faro, or Sicily).

Faro, or Pharo; one of the most common of all games of hazard played with cards in Europe, in which immense sums are lost and won. It is a favorite game at the different watering places. The players are called *punters* or *pointeurs*; he who manages the bank, the *banker*. (For the rules and regulations of this simple game, see Hoyle).

FAROE or FAROER 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, 5209.

FARQUHAR, George, a comic writer of eminence, was born at Londonderry, 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 favor of lord Orrery, who procured him a lieutenancy 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 stage. It has great merit; but much of it 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 Farquhar is 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's Stratagem, which is reckoned his master-piece, though finished within the short space of six weeks, while laboring under serious indisposition. He died in 1707. It is no mean testimony of the dramatic talents of Farquhar, that three of his plays are still favorites 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 incidents, and in unity of action. The libertinism of language and sentiment which his works exhibit cannot be defended.

FARRILL, don Gonzalo O'; a Spanish lieutenant-general, born at the Havanna, in 1753, of an Irish family settled there. This distinguished soldier and statesman, was educated at the school of Sorèze, 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 1780, he made himself acquainted with the organization of the schools for 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 Castaños 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 Fluvia, and penetrated to Perpignan. After the treaty of Bâle, 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. He advised the king to place himself under 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 Mazaredo 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, in a letter to the king, frankly explained the motives of his con-

duct; but his property was confiscated, and he himself condemned to death, as a Josefino, 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 defence of their political conduct, which is an important addition to the history of the Spanish revolution: *Mémoires de Don Miguel Azanza et de Don Gonzalo O'Farrill, et Exposé des Faits qui justifient leur Conduite politique, depuis Mars,* 1808, *jusqu'en Avril,* 1814.*

Farthing; the fourth part of a penny; originally the *fourth 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*.

Fascines; bundles of boughs, twigs, &c., 16 feet in length, and usually 1 foot in diameter. They are made on trestles, or any kind of support placed about 2 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 2 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 *saucissons*, or *battery-sausages*.

Fashionable; 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 conformity to the *mode*, the quickly changing *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, eat. *Fashionable* is applied to every thing, action, and disposition, whilst the corresponding words, 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 to 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 which it is true in other countries; and it is not strange that the English should have formed a word expressive of this disposition, and that this word should be adopted by other nations to designate this peculiarity. Even the French, the masters of *la 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 said before, extends not only to dress and external 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 aftmost or hindmost timbers of a ship, which terminate the breadth, and form the shape of the stern. They are united to the stern post, and to the extremity of the wing transom by a rabbet, 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. Flavius, who had been secretary to the *Pontifex Maximus* Appius Claudius, exposed them to the people. From this time they were publicly known.

Fastolf, sir John; an English gentleman, who is chiefly memorable as the supposed prototype of Shakspeare's Falstaff. (q. v.) He served with some distinction in Ireland, under sir Stephen Scrope, who dying in 1408, Fastolf married his widow, an heiress of the Tibtot family. Her rich estates in Gloucestershire and

* Don Miguel Azanza, formerly viceroy of Mexico, and minister of Ferdinand VII and Joseph, who left Spain in 1814, and lived six years at Bordeaux by the assistance of his friends, received from Ferdinand VII, in 1825, a pension of 5000 francs. He also ventured to apply for the restoration of his former dignities, but without success.

Wiltshire he kept in his own possession, to the prejudice of his step-son, who in vain endeavored to recover them after the death of his mother. Fastolf obtained the order of the garter, and, in 1429, defeated a body of 6000 Frenchmen, at the head of only 1500 men, and brought relief to the English army before Orleans. But, the same year, he tarnished his laurels at the battle of Patay, by fleeing, panic stricken, from the celebrated Joan of Arc. The regent duke of Bedford deprived him of the garter for this misbehavior, but soon restored it to him, in consideration of his former services. His death took place in 1469, and he left in the hands of his confessor, Thomas Howes, a Franciscan friar, the sum of £4000, to be expended in the repair of churches, religious houses, &c.

Fasts. Nobody will deny the good influence which a retirement for some time from this busy and alluring world must have on a person who dedicates this time of retirement to reflection, renouncing all worldly pleasures. This is the origin of fasting, which is deeply rooted in human nature. The great difficulty is, to prevent fasting, if made a general religious ordinance, from becoming, in the case of the multitude, a mere outward form. Abstinence from food, accompanied with signs of humiliation and repentance or grief, is to be found more or less in almost all religions. Among the Jews, fasts were numerous; but they must have all been founded 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. Herodotus says that the Egyptians prepared themselves by fasting for the celebration 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. No public fast 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 40 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 Fridays 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 any fasting day falls upon Sunday, 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 Assumption; 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 fasting; and the ordinance of parliament prohibiting meat on fast days is designed for the encouragement of fisheries and navigation. In the New England states, it is common to institute a day yearly in the spring, by proclamation of the executive, as a day of fasting, humiliation, and prayer, which is observed by the common religious services in the houses of public worship, and by abstaining from labor. (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 spermaceti, butter, tallow, lard and suet. Whale oil, or train oil, is extracted from the blubber of the whale (principally the *balæna mysticetus*). Originally, it is a firm solid fat. 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 *fenks*, which is probably coagulated 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 color 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 smell, and burns with a pure and bright flame. Whale oil requires to be kept in close vessels to prevent 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 sper-

maceti oil. The best way of using it is found to be by converting it into gas. It may be deprived of its offensive odor, however, by the use of chloride of lime. Its specific gravity is 0.9191. It boils at 640° Fahr., and may be distilled; but its properties are then materially altered, or, rather, it becomes a new substance, its specific gravity being diminished to 0.868, its boiling point lowered, and its inflammability much increased. Whale oil consists of carbon 68.87, oxygen 16.10, and hydrogen 15.03. Sperm oil, or spermaceti oil, forms part of the oily substance found in the cranium of the spermaceti whale, or *physeter macrocephalus*. The oil is separated by putting the mass into a woollen bag, and pressing it, by which the fluid is made to run out, and the solid residue, when washed with a weak alkaline ley, affords spermaceti. (q. v.) This kind of oil is much purer than train oil, and burns away without leaving any charcoal on the wicks of lamps. In composition, it differs but slightly from whale oil, consisting, according to doctor Ure, of carbon 78, oxygen 10.20, and hydrogen 11.80. The fat of animals, or more solid animal oils, may be separated from the membranous 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 odor. It is apt to become rancid, however, by keeping—a change connected with the absorption of oxygen. It is insoluble in water or in alcohol. It melts at 90° or 100° Fahr.: by raising the heat, it is rendered more acrid, and exhales a pungent vapor. In close vessels, it is decomposed, and, among other products, yields a large quantity of olefiant gas. It is inflammable, and affords, by combustion, water and carbonic acid. The acids act chemically on fat. Sulphuric acid chars it. Nitric acid, mixed with it in small quantity, gives it a firmer consistence, and renders it soluble in alcohol. In this state, it has been called *oxygenated* fat. The animal oils and fats combine with the alkalies, and form with these perfect soaps. With some of the earths, and metallic oxides also, they form saponaceous compounds. They even facilitate the oxidation of some of the metals, as copper and mercury, by the atmospheric air. Animal fat is not homogeneous, but consists of two different proximate principles, called *stearine* and *elaine*, the former of a firm consistence, resembling suet or tallow; the other more soft or liquid, and analogous to vegetable oils. (For an account of the mode of separating these principles, and their properties when separate, see those articles; for a view of the theory of saponification, see *Soap*.)

Fatalism (from *fate*, q. v.); the belief in fate, an unchangeable destiny, to which every thing is subject, uninfluenced by reason, and preëstablished either by chance or the Creator.—*Fatalist*; a believer in fatalism.

Fata Morgana; a singular aërial phenomenon seen in the straits of Messina. When the rising sun shines from that point whence its incident ray forms an angle of about 45°, on the sea of Reggio, and the bright surface of the water in the bay is not disturbed either by the wind or current, when the tide is at its height, and the waters are pressed up by currents to a great elevation in the middle of the channel, the spectator being placed on an eminence, with his back to the sun, and his face to the sea, the mountains of Messina rising like a wall behind it, and forming the back ground of the picture,—on a sudden there appear in the water, as in a catoptric theatre, various multiplied objects—numberless series of pilasters, arches, castles, well delineated, regular columns, lofty towers, superb palaces, with balconies and windows, extended alleys of trees, delightful plains, with herds and flocks, armies of men on foot, on horseback, and many other things, in their natural colors, and proper actions, passing rapidly in succession along the surface of the sea, during the whole of the short period of time while the above-mentioned causes remain. All these objects, which are exhibited in 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 vapor, and dense exhalations, not previously dispersed by the action of the wind and waves, or rarified by the sun, it then happens, that, in this vapor, as in a curtain extended along the channel to the height of above forty palms, and nearly down to the sea, the observer will behold the scene of the same objects 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 from 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 ap-

pear only at the surface of the sea, as in the first case; but all vividly colored or fringed with red, green, blue, and other prismatic colors. As the day advances, the fairy scene gradually disappears. A very singular instance of atmospherical refraction is described in the Philosophical Transactions, as having taken place at Hastings, England. The coast of Picardy, which is between 40 and 50 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. 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. Vallery; 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 colors 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 *Mirage.*) 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 *Astronomie Phys.*, Paris, 1810, 3 vols., 1st vol.)

Fates (in Latin, *Parcæ;* in Greek, Μοῖραι); the inexorable sisters, 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 endeavored 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 seem to have a general power over events, and are always present where any thing is to be divided (from *partire*, Greek μειρειν). 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, and are daughters of Erebus and Night. 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 spindles in motion, and are free from change. A peculiar department is assigned to each of them. The first writes, 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 scissors, with which she cuts it off. We find, in the northern mythology, three beautiful virgins, the *Nornen*, who determine the fate of men. Their names are *Urd* (the past), *Varande* (the present), and *Skuld* (the future). (See *Northern Mythology.*)

Fathers of the Church. (See *Church, Fathers of the.*)

Fathom; a measure of six feet, used to regulate the length of the cables, rigging, &c., and to divide the lead (or sounding) lines, &c.

Fauche-Borel, an individual distinguished for his efforts in favor of the Bourbons, during the period of the French revolution, was born at Neufchatel, where his family had resided after they had been obliged, by the revocation of the edict of Nantes, to flee from Franche-Comté. At the beginning of the revolution, having printed some writings for the emigrants, he was banished from his native city, and thenceforth dedicated himself entirely to the service of the emigrants and the royal family. From 1793 until 1814, he was concerned in all the attempts which were made for the restoration of the Bourbons. In 1795, he was employed as mediator between Pichegru and the prince Condé, for the purpose of winning over the former to the cause of the exiled royal family. In case of success, he was to receive 1,000,000 of livres, the cordon of St. Michael, and the office of director of the royal press. If unsuccessful, he expected only 1,000 louis-d'or. Piche-

gru having accepted the offers, under condition, however, that Austria would coöperate, Fauche-Borel went to the prince Condé, who sent him to Strasburg, which was then the centre of the French army. Here, under the name of M. Louis, he pretended to be desirous to buy a printing-office. But he became suspected, was arrested, and Pichegru was deprived of his command. Louis, however, was set at liberty, because nothing was found in his papers to confirm suspicion. In 1796, he opened a new correspondence with Pichegru in Arbois, the consequence of which was that the latter, then president of the council of the five hundred (1797), entered into the plans in favor of the Bourbons; which, however, were frustrated by the 18th of Fructidor. (q. v.) Fauche-Borel's name was placed on the list of the proscribed; and, as his correspondence with Pichegru had been found in the carriage of the Austrian general Klingling, he was obliged to conceal himself. According to his own account, he found means to gain over the director Barras in favor of the restoration of the monarchy; but the latter, in 1819, publicly declared this assertion a falsehood. The 18th of Brumaire frustrated all the counter-revolutionary projects, and Fauche-Borel went to London. He was then sent to act as mediator between Moreau and Pichegru. He went to Paris, but was arrested, and remained imprisoned 18 months in the Temple, until he was delivered, at the request of the Prussian minister, and carried by gendarmes to the Prussian territory. The Prussian government probably did this on account of its connexion with Neufchatel. He, nevertheless, ventured to distribute in France, in 1804, a proclamation of Louis XVIII to the French people. To avoid the danger of being again arrested, he went to England, then to Sweden, and, in 1806, again to London. In 1814, he entered Paris in the train of the allies, when a host of conspirators, and persons who had long fought against their own country, flocked into the capital with the Bourbons and their allies. Fauche-Borel then went with prince Hardenberg to London, and at last returned to his native canton. He had already made arrangements for settling in Paris, when Napoleon's return from Elba prevented him. From Vienna, where the Prussian minister count Golz had sent him, he went to join Louis XVIII at Ghent; but, his reputation for intrigue drew upon him the attention of the duke of Blacas, who suspected him of being in Napoleon's service. The consequence was, that he was exiled, and imprisoned in Brussels, until the Prussian minister obtained his release. After the battle of Waterloo, he went to Paris; and at a later period to England, with a pension from government. Of his works, the most important is *Précis historique de différentes Missions dans lesquelles M. Louis Fauche-Borel a été employé pour la Cause de la Monarchie*, &c., first published in 1815, in Paris, but suppressed; reprinted in 1816, in Brussels. The motto of this work, *Pœnam pro munere* (Punishment for reward), would seem to indicate that his august employers did not fulfil his expectations after they were firmly seated.

Faujas-de-Saint-Fond, Barthélemi, 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, particularly to 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 trap formations 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 Maestricht* (1799 to 1808, 10 numbers, folio), and his Travels through England, 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 principally 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 old dancing faun in the Florentine museum, 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 Faunus, 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. (Respecting the distinctions between them, see Voss's *Mythological Letters*, 2d vol., page 252.)

FAUNA (from *Faun*, q. v.); a collective word, signifying all the mammalia 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 Mentz, one of the three artists to whom the invention of printing is generally ascribed. It is, however, doubtful if he did more than advance money to Guttemberg, who had previously made some attempts with carved blocks at Strasburg. The third person concerned was Schæffer, who married the daughter of Faust, and who is allowed the honor of having invented punches and matrices, by means of which this grand art was carried to perfection. The first fruits of the new process was *Durandi Rationale Divinorum Officiorum*, published by Faust and Schæffer in 1459, which was followed, some years after, by the *Catholicon Johannis Januensis;* after which, in 1462, succeeded the Bible, so much sought for by those fond of 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 Schæffer possessed in common with Guttemberg. It has been pretended that, when Faust went to Paris to sell a second edition of his Bible of 1462, he was arrested on the supposition that he effected the printing of them by magic; but this story appears to be mere fable. There is reason to believe that he died of the plague in 1466, as the name of Schæffer alone is found in the books printed after that time at Mentz. According to some German writers, the celebrated romance of doctor Faustus, the subject of so much traditionary horror and admiration, and which has been since immortalized by the genius of Goethe, originated in the malice of the monks towards Faust, whose employment of printing deprived them of their gain as copiers, that occupation having been almost 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 16th century. Doctor Faust has become, in Germany, one of those standing national characters, which represent 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 Suabia; 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 16th 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 24 years. A spirit called *Mephistopheles* 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 Leipsic, in 1523, where an old painting representing the subject is still to be seen. The evil spirit finally carried him off near the village of Rimlich, between 12 and 1 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 Enchanter 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 manuscripts were greatly diminished by his invention; but this is not at all probable. Others have entirely disbelieved his existence; but Melancthon, Tritheim 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 incorpo-

rated with some of the finest productions of the German muse. The most distinguished poems on this subject are Klinger's *Faust's Leben, Thaten und Höllenfahrt* (Faust's Life, Deeds, and Descent to Hell), and Göthe's celebrated *Faust*. The latter is one of the greatest poems the Germans possess, written in the full vigor of the author's genius. Göthe's Faust is a man thirsting for truth and knowledge, but presumptuously and ungovernably, forgetting that he is a mortal, and liable to the fate of the Titans. After having studied all sciences, and found them empty and illusory, and having become deeply sensible of his own weakness, he resolves to give himself up to sensual enjoyment to secure some portion of pleasure in life. Göthe's Faust is a most philosophical debauchee, as his Mephistopheles is the most refined of evil spirits. Faust, indeed, is a character of whom Mephistopheles justly says,

Und hätt' er sich auch nicht dem Teufel übergeben,
Er müsste doch zu Grunde gehn.

This production is in the dramatic form, but not written for representation.

Faustina; 1. the 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 honor 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 delivrée par la Pucelle d'Orléans*—obtained the prize in the *Jeux floraux*. But his poetical reputation rests principally on his numerous productions for the *opéra 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 Saxe into Flanders. He was often obliged to use his talents before an engagement or any other important event, to encourage the army. An instance of this sort occurred 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 favorite actress, during the interval between the acts. Favart had the grief to see that the charms of his wife had conquered the victor of Fontenoy, who, on his advances 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 Voisenon, 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 dialogue, while his wife added many strokes of *naïveté* and feminine sprightliness; 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, Soliman II, or the Three Sultanesses, *Ninette à la Cour*, *La Chercheuse d'Esprit*, *l'Astrologue de Village*, &c., are either in the *Répertoire du Théâtre Français*, or are translated into foreign languages. During the latter part of his life, Favart received a pension of 800 francs from the *comédie Italienne*. He died 1792, at the advanced age of 82 years. Original and lively ideas, graceful and natural expression of tender feeling, a skilful delineation of characters mostly rural, and a pure and easy diction in verse as well as prose, are the attributes of Favart's muse. A complete edition of his works was published in 8 vols., 1763 (to

which two were added in 1772), and, in 1809, a selection of his best operas, in 3 vols.—His son, Charles Nicholas Favart (born 1749, died 1806), known as an actor at the *théâtre Italien*, wrote several pieces which obtained considerable applause.

FAVIER; an eminent French statesman, born at Toulouse, in the beginning of the 18th century. At the age of 25, 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 nominated secretary to M. de la Chétardie, ambassador to Turin, after whose death he was patronised 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 secret missions in Spain and Russia, under the ministry of the duke de Choiseul. He engaged in other secret transactions of the French government at the instigation of the count de Broglie, who corresponded secretly (but by order of Louis XV) with the French foreign ministers, which involved him in difficulties, and obliged him to leave France. After passing some time in England and Holland, where he became acquainted with prince Henry of Prussia, 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 6000 livres, but was not afterwards employed. He died in 1784. M. de Ségur has collected a part of the works of Favier in his *Politique de tous les Cabinets de l'Europe pendant les Règnes de Louis XV et de Louis XVI* (1793, 2 vols., 8vo., and 1802, 3 vols.). Favier also published several pieces himself; and he was engaged with Fréron, J. J. Rousseau, the abbé Arnaud, Suard and others, in conducting the *Journal Etranger*.

FAWKES, Guy. (See *Gunpowder Plot.*)

FAXARDO, Diego de Saavedra, a statesman, and one of the best Spanish prose writers, was born, towards the end of the 16th 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 Borgia, to Rome, as secretary for Neapolitan affairs, was afterwards Spanish agent at the Roman court, and repaired to Ratisbon in 1636, to be present at the election of Ferdinand as 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 Principe politico Christiano, representado en cien Empresas*, with emblems (Monaco, 1640), and often republished, also translated into Italian, French, Latin and German; likewise *Corona Gotica, Castellana y Austriaca politicamente ilustrada.* This desultory and superficial, yet classical specimen of historical research, was to have consisted of three parts; but one only was completed. Alphonso Nuñes de Castro added a miserable continuation. He also wrote *Republica 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 printed at Antwerp, 1683, 4to.

FAYAL; one of the Azores; lon. 28° 41′ W.; lat. 38° 31′ N. It is of a circular form, about 10 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.*)

FAYETTE, general la. (See *La Fayette.*)

FAYETTE, Marie Madelène, countess de la. (See *La Fayette.*)

FAYETTEVILLE, a post-town of North Carolina, capital of Cumberland county, near the west bank of the N. W. branch of Cape Fear river; 60 miles S. Raleigh, 95 N. W. Wilmington, 196 N. by E. Charleston; lon. 97° 6′ W.; lat. 34° 2′ N.; population, in 1820, 3532.* It is one of the most flourishing, wealthy and commercial towns in North Carolina, and has a pleasant and advantageous situation at the head of steamboat navigation. The Cape

* For the population in 1830, see *United States.*

Fear company have lately cleared the river of logs and sand shoals, in order to render it navigable for steamboats, and have constructed a canal from the river through the town, so that boats may lie along by the side of the warehouses. It contains a court-house, a town-house, an academy, a masonic hall, three banks, one of which is a branch of the U. States bank, and three houses of public worship. Several of the public buildings are large and elegant. The town is regularly laid out, and the principal streets are 100 feet wide. Great quantities of produce, consisting of cotton, tobacco, flour, wheat, flaxseed, corn, hemp, naval stores, &c., are collected here, and conveyed in boats down the river to Wilmington. The situation of the town is healthful, and favorable 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 Scotch Highlanders.

Fayoum; a province of the northern part of Central Egypt, separated by mountains from the Lybian 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 canal of Joseph, 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, besides some brought from Cairo and Lower Egypt. Commerce is carried on with Cairo by caravans, which weekly leave Tamieh with shawls, 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.

Fé de Bogotá, Santa. (See *Bogota.*)

Feasts of the Ancients. Homer, in his Odyssey (I. 225 et seq.), speaks of two kinds of feasts: one (*Eilapine*) given by a person at 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 (σκιαι, *umbræ*), 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 distributer 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 drank mixed with water. The mix-

ing 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 (*pocula*). 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 (*encycloposie*), 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 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 *scolion* (see *Scolia*) 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 *apophoreta*. 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. Two sides of the shaft are covered with the barbs, running in a uniform direction; 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. The 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 *moulting*. When feathers have reached their full growth, they become dry, and only 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 moulting 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 Greenlander makes use of the skin of the eider duck, wearing the feathers next to the body, 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 Würtemburg, 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 coagulated albumen, without any traces of gelatine.

February; from the Roman goddess *Febria*, or *Februa*, 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 manes of the deceased; and Macrobius tells us, that in this month also sacrifices were performed, and the last offices were paid to the defunct. The Mosaic religion also prescribed such purifications.

FECULA. (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 united, sovereign states, as, for instance, the Swiss republic, the U. States of N. 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, whilst the different members of the U. 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 confederation has not a federal government, because sometimes a confederation 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 Germanic confederation. (See *Government.*)

FEE, in law, or *feudum*, properly signifies an inheritable estate in land, held of some superior, or lord; and, in this sense, it is distinguished from *allodium*, 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, or by a tenure, of some superior lord, the absolute or allodial 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 vigor; 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 the amplest estate that can be held in lands in the U. States, where the land titles are allodial, there being no practical or theoretical doctrine of a tenure, or holding under a superior. In all countries, property in lands, as well as chattels, is derived through the laws, and is guarantied 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. In the strict sense of *fee*, therefore, there would be no such thing in the U. States, where the titles to lands have no tinge of the feudal system. But the word *fee* is used here as well as in England; and in the same sense, except that, in England, it refers to this theoretical, abstract, absolute property of the king in all the lands; whereas, in the U. States, it has no similar reference or implication; the property of the owner in his lands being considered as absolute as his property in his goods, or his dominion over his own person, in respect to all which his rights are subject to the laws, but not more so in respect to real property than in any other respect; nor is this subjection understood to impair or qualify his property, which is, notwithstanding, considered to be absolute. The amplest 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 personal 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 land 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, 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, and thus gradually passes off, through the locks, to the lowest. The streams, which furnish the water at this and other points, are called *feeders*.

FEEJEE; 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 hogs, dogs, fowls, and all the kinds of fruit and roots that are found in any of the others, and as being much larger than Tongataboo, to the dominion of which it is not subject, as the other islands of the Archipelago are. The more northerly part of this numerous group reaches north to lat. 15° 33′. Captain Bligh fell in with the easternmost of the Feejee islands in lon. 178° W. The southernmost island lies in lon. 178° E., lat. 19° 50′ S. The stature of the Feejeeans is high, their complexions are dark, and their hair approaches to wool. They are cannibals, very ferocious, and dreaded by their neighbors.

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 every where, 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 organization. The structure of the nervous *papillæ* is not absolutely necessary to it. The lips of a fresh wound, the *periosteum*, 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, June 18, 1675, over the Swedes, by which he saved 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, Rhynvis, one of the first modern poets of Holland, and with Bilderdyk (q. v.), the restorer of degenerated Dutch poetry, was born at Zwolle, in Over-Yssel, in 1753. 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 Homer. He early displayed the happiest talents for poetry, and, after having studied law at Leyden, resided, from 1770, in his native city, and pursued his favorite 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 societies of Holland. The poetical society of Leyden awarded to him the two first prizes for two poems in memory of admiral Ruyter. Feith, satisfied with the honor, 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 medal, 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 Bellamy. (q. v.) It predominates particularly in his romance Ferdinand and Constantia (1785), and, through his example, has for a long time prevailed in Holland. His Grave is the first distinguished didactic poem since the revival of Dutch poetry. This poem, with a good plan, with many excellent passages and charming melody, has also too much of the melancholy character. His Old Age (*De Ouderdom*, 1802) is free from this fault, but has no definite plan. Among his lyric poems, *Oden en Gedichten* (Amst. 1798, 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 *Thirza*, *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 Dutch freedom. His poetical Letters to Sophia on Kant's Philosophy (*Brieven aan Sophie over de Kantiaansche Wijsbegeerte*, 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 finished style and excellent criticisms.

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 cleavage parallel to the planes of a doubly oblique prism, which presents, by the reflective goniometer, in one direction, four angles of 90°; in another, four, alternately of 59° 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 perpendicular 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 unequally produced planes, whose number varies 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 those found in any species in mineralogy. The following may be instanced as the simplest of those ordinarily met with, viz. an oblique prism with four faces (*Felspath unitaire*, H.); a prism with 10 faces, six broad and four narrow, terminated at each extremity by two broad culminating faces (*F. quadridécimal*, H.); an oblique rhombic prism (oblique from the obtuse edge), having its acute lateral edges truncated, and terminated by a single plane at each extremity (*F. prismatique*, H.); the same as the last, but terminated at each extremity by summits of five faces, disposed without symmetry (*F. sexdécimal*, H.) The lustre of feldspar is vitreous, sometimes inclining to pearly, upon the perfect faces of cleavage; prevailing color white, inclining to gray or red; sometimes gray, flesh red, and rarely 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 Vauquelin, 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 micaceous and argillaceous slate. It is contained abundantly in almost all porphyries, in which it sometimes exists in large imbedded crystals. It abounds in primitive and secon-

dary greenstone, the traps and trachytes, 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 beds, in primitive limestone; 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 the U. States, and in China, where it is called *kaolin*. Several varieties of feldspar are used in the arts and manufactures. 1. The transparent, 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 *fish's-eye-stone*. 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 small quantity at Beverly, in Massachusetts, is likewise much esteemed by the lapidary. 3. A third variety of this species, employed in jewelry, is the avanturine feldspar, which comes from the island of Cedlovatoi, near Archangel, and which is of a honey-yellow color, and every where penetrated by little golden spangles. 4. The pure varieties of feldspar are used in the composition of the paste of porcelain; also for the enamel with which it is covered; and the decomposed variety, 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 which have generally been embraced under the present species, were separated, by Mr. Brooke, and erected into a distinct species, under the appellation of *Cleavelandite*, in honor of professor Cleaveland, of Bowdoin college. This mineral cleaves parallel to the planes of a doubly oblique prism of 119° 30′, 115°, and 93° 30′. It occurs in thin rhombic tables, variously replaced upon their lateral edges, and transparent; also massive—the individuals being compressed, and giving to the composition a lamellar appearance. Lustre, hardness and color similar to feldspar; brittle; specific gravity, from 2.61 to 2.68: composition of a specimen from Chesterfield—silica, 70.68; alumine, 19.80; soda, 9.06; lime, 0.23; oxide of iron and manganese, 1.11. It is found in Sweden, and, in the U. States, at Haddam (Connecticut), and at Chesterfield and Goshen (Massachusetts), at which last place it occurs, in veins, in granite, with tourmalines, spodamene, beryl, &c. (For Labrador feldspar, see *Labradorite*.)

Fell, Fiell, and Field, is a Scandinavian word, signifying *rock*; as, *Dofrefiell*, sad 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 exerted 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 favor of the Americans, during their struggle for independence, excited in him a peculiar interest in our country. He was confirmed in these feelings by the example of his father, whom he describes as frequently returning 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, his subsequent character and destination. At the age of 15, he was placed under the instruction of the celebrated blind poet Pfeffel, 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 learned to revere 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 16, he found the pursuits and character of the young men of his own age so frivolous and corrupt, that he abandoned their society for 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 endeavored 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 permission to seek a situation more favorable for the pursuit of his studies, and preparation for future usefulness 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 completion of his own, and felt 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 never wavered; and so confident was he 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 labors 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 sessions 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 beacons 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 claims and exclusive privileges of the patricians, 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 them. But Berne was taken, and the cause lost, before any efficient force could be organized. Fellenberg was proscribed, a price was set upon his head, and he was compelled to fly to Germany. At this time, he sent some of his funds to the U. States, as a resource, in case of the utter ruin of affairs at home, and had some intention of coming himself. He was, however, recalled to Switzerland soon after, and sent on a mission to Paris, to remonstrate against the rapacious and oppressive conduct of the agents of the French republic. He was instrumental in procuring the recall of one of the most profligate; but the utter disregard of principle and honesty, which pervaded the public men and public measures of the day, disgusted him with the diplomatic career, and he resigned his office. For a short period after his return home, he occupied a public station; but the want of faith and public spirit which he found on the part of the government, in executing measures whose direction had been com-

mitted to him, confirmed his disgust with political life, and he resolved to abandon it entirely, until a better day should dawn upon his country. 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 meliorating 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, having come into possession of an ample fortune, 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 has 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 records of benevolent enterprise. His great object was to elevate all classes of society, by fitting 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 in-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 laboring classes, and to society at large. He selected Hofwyl on account of its situation; so insulated as to secure it from the influence of bad examples, yet surrounded by villages which would furnish laborers, and only six miles from the city of Berne. It was an estate of about 200 acres, under poor cultivation, lying on a hill filled with springs, and surrounded on three sides by a valley 80 feet in depth. He commenced with employing a large number of laborers in digging drains in every direction, some even to the depth of 30 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 about 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 successive banks of earth placed before it, and in part, during the winter, by sleds descending and raising each other alternately, by means of pulleys, as is sometimes done in coal beds. In connexion 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 labor. A system of four years' cropping, with deep ploughing, and the invention of superior machines 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 unintermitted succession of crops. The labors of the plough require only half the number of animals formerly used, and the fields of grain produce nineteen fold the amount

of the seed sown. 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 nourishment may be drawn from a given portion of soil than has been 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 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 600 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 his friends withdrew from all participation 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 coöperation, that republic of education which it was his favorite 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, in its nature, impracticable. Pestalozzi soon after was offered the much superior castle of Yverdun, 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 20, and the pupils to 80. After selecting and losing two instructers 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, by his earnest request, 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-laborer 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 contented themselves with theoretical and superficial knowledge; and he has since preferred 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, 42 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, 27 were added to this number, from 7 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 instructers has been connected with the agricultural institution, and none have been received except those who were employed at the same time as laborers. The establish-

ment had by this time become the resort of strangers from all quarters. The governments of some of the cantons, the general government of Switzerland, and several of the German princes, sent deputations to examine and describe it. The late king of Würtemberg requested permission from the government of Berne to visit Hofwyl 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 1814, in accordance with a plan suggested by Fellenberg to the emperor Alexander, for the gradual melioration of the state of his empire, he sent the count Capo d'Istria (now president of Greece) to examine the establishment. His report was in the highest degree favorable; and, in consequence of it, Alexander not only presented to Fellenberg the insignia of the order of St. Vladimir, but confided to his care seven sons of Russian princes and noblemen, for whose use he maintained a Greek chapel near Hofwyl. In a few years after, the political state of Europe excited jealousy in regard to the influence of Hofwyl on its pupils; many states forbade the education of children abroad; and even the patronage of Russia was withdrawn. Of late, about one third of the pupils have been English, and the remainder Swiss. 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 became necessary for the residence of the 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 1823, another building was erected in the garden of the mansion, for a school of poor girls; and, in 1827, the last building, designed for the intermediate or practical institution. Hofwyl 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 300 persons; 2. work-shops for the fabrication and improvement of agricultural implements, scientific apparatus, and clothing for the establishment; 3. a lithographic press, at which music and other things useful to the institution 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 laboring 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 8 or 10 boys, who are placed, much like the new settlers of America, on an uncultivated spot, to acquire their subsistence by their own labor. 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 100 pupils in the scientific and practical institutions, and 117 in the agricultural institution, under the care of 40 educators and instructers. The pupils in the scientific institution and the school for peasant girls are under the immediate care 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 coadjutors. 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. Others sought 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 playgrounds, 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 nature of the subject and the wants of the individual, without adhering slavishly to any. The fundamental views of Pestalozzi are adopted in many branches, with such modifications as are necessary in their practical application. The utmost watchfulness is used in moral and religious education, not merely in removing, as much as possible, the influence of bad example, but by the constant supervision and parental care of the children of Fellenberg and a chosen set of coadjutors, 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 developement 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 14 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 great principles we have 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 labor; and that, if they can be retained to the age of 21, 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. Several manual labor schools have been formed in our own country, whose influence on those destined to a professional life will doubtless be most happy. But we regret that no institution, so far as we are informed, has yet been founded, in which agriculture is made the basis of education for the outcast, and of reformation for offenders; and where the attempt is made to qualify the poor, by an education of moderate expense, for useful citizens, in their original occupation. We cannot forbear expressing our hope, that some of our uncultivated lands will soon be appropriated for such moral lazarettos as the colony of Meykirch, which may be the means of rescuing some of our youth, even of the higher classes, from the corruption into which idleness alone has often plunged them, and may serve as substitutes for those systems of naval and military discipline, to which they are sometimes consigned as a forlorn hope, and whose tendency, when applied to those destined for civil life, seems to us inconsistent with the genius of a free government. We cannot but long to see some Fellenberg rise up amidst the wealthy of our own country.

Felloe; the circular wooden rim, which, with the addition of a nave and spokes, makes the wheel of a carriage.

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; or fellowship without time, and fellowship with time.

Single Fellowship is when all the moneys

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

$$\text{As } 6000 : 1200 :: \begin{cases} 1000 : £200, \text{ A's share.} \\ 2000 : £400, \text{ B's share.} \\ 3000 : £600, \text{ C's share.} \end{cases}$$

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 time it has been engaged; then say, As 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 4 months, and B £60 for 5 months, with which they gained £24: required each person's particular share.

$$50 \times 4 = 200$$
$$60 \times 5 = 300$$

$$500 : 24 :: \begin{cases} 200 : £\ 9\ 12s. \text{ A's gain.} \\ 300 : £14\ \ 8s. \text{ B's gain.} \end{cases}$$

(See Bonnycastle's *Arithmetic*, and most other authors on this subject.)

Felo 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 *felo 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 compassionate the relatives of a man who had committed such an act of desperation, than to inflict an additional misfortune upon them, they most frequently, and, indeed, almost 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 *felo 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, inoperative, as well as inhuman and unjust, and legislators have recently begun to expunge it from the modern codes.

Felony, 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 *lon* (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 would, 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 *felony*, 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. According to the derivation of this term, and in its original meaning, there would be no felonies in the U. States; for, though fines are imposed for many offences, the direct forfeiture of lands and goods is not a consequence of any crime in this country. The term is generally used, however, here, as in England, to signify crimes which are punished with death, the number of which is very limited, both by the laws of the U. States and those of the several states. (See *Crimes*, and *Death, Punishment of.*)

Fels and Felsen; a German word occurring in many geographical names, and signifying *rock*; as *Drachenfels, Dragon-rock.*

Felsœ; a Hungarian word, meaning *superior, situated above.* It is the opposite of Also, *situated lower.* It occurs in geographical names.

Felspar. (See *Feldspar.*)

Feltham, Owen; an English author, born about the middle of the 17th 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 earl of Thomond, during which period he published a work of great merit, entitled Resolves, Divine, Political and Moral. This book went through 12 editions before the year 1709. A 13th

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 allows the fibres to glide among each other, 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 furs 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 crown, and forced on a block, which 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 16 leagues from Venice; lat. 46° 0′ 43″ N.; lon. 11° 55′ 24″ E. There are some manufactures here of silk and leather. Feltre is the sea of a bishop; it contains 4530 inhabitants. In 1809, Napoleon gave the title *duke of Feltre* to general Clarke. (*See the following article.*)

Feltre (Henry James William Clarke), duke of, of Irish extraction, was born at Landrecies, October 17, 1765. 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 retained in it by the directory, which, 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 in gaining over Clarke entirely to his interests, and employed him as his secretary in the negotiations of Campo-Formio. The 18th 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 18th of Brumaire (q. v.), and became now closely connected with Bonaparte. In 1800, he was commandant extraordinary of Lunéville, during the sessions of the congress at that place. After passing three years as *chargé d'affaires* at the court of the young prince of Parma, who had just 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 honor. He was employed, after the peace of Presburg, in several diplomatic negotiations with 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 *Dotations.*) 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'aviez ja-*

mais parlé de votre origine doublement 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 breaking out of Mallet's conspiracy, in 1812, in 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 honor, 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 Rovigo (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, every thing in Feltre's department was left undone. The most important points were left defenceless, and all precautions were neglected. To disguise his perfidy, Clarke followed the empress to Blois, and even 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 chaud de dessous Bonaparte.* 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 barbarous 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 again given to the duke of Feltre, and the new minister repaired to the chamber of deputies, where he asserted, that, "arrived at the age of 50, 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 obtained her husband's pardon from Napoleon. But Waterloo changed the fate of France, and Feltre published a proclamation, in which are the expressions, *Bonaparte et sa séquelle, vils esclaves 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, reäppointed minister; and in this post he proscribed the most experienced officers of the army, and, in order to procure himself support, he bestowed large sums on his creatures under the name of arrears. He classified all the officers, in regard to the degree of suspicion attached to them—he who had been publicly a parasite of Napoleon. He died October 28, 1818.

Felucca; a little vessel with oars, common in the Mediterranean. (See *Boat.*)

Feme. The *Femgerichte* (Fem-courts) were criminal courts of Germany in the middle ages, which took the place of the regular administration of justice (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; hence they were called *Westphalian,* or *secret tribunals.* The word *fem* is probably derived from the Old Saxon *verfemen,* which means to excommunicate or curse. *Femgericht,* therefore, is a tribunal which has power to subject the offender to banishment or outlawry. These courts derive their origin from Charlemagne; but no explicit account of them occurs earlier than the 13th 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 authority. When the duchy of Saxony was dissolved, the archbishop of Cologne received Enger and Westphalia, 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* tribunals, came into active operation, in the place of the courts which had hitherto been held by the bishops or royal commissaries *(missi regii).* Amidst the general distractions which were then prevalent in Germany, it was not difficult for them to acquire a tremendous authority, while they might, at the same time, produce some beneficial results; and the emperors afterwards increased this authority, by availing themselves, at times, of the *Femgerichte,* to promote their own designs, and

to intimidate, by their means, powerful nobles. In process of time, however, they degenerated, and no longer confined themselves to law and precedent, so that the secrecy in which they enveloped themselves, only served as a cloak to their criminal purposes. The great 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 neighbor, which could not be sustained before the ordinary judges, betook himself to a Westphalian tribunal. These secret tribunals were most terrible in the 14th and 15th centuries. It is therefore by no means surprising that so many voices were raised against them, and that, in 1461, 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 likewise obtained from the emperor letters of protection against the violence of the Westphalian tribunal. The emperors themselves went no further than to make some unavailing attempts to introduce improvements into the constitution of the secret tribunals. These were bold enough, however, to oppose themselves to the emperors. Their influence was not entirely destroyed, until the public peace (*Landfriede*) 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 1568. 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 internal organization. The chief officer, who was generally a prince or count, had the supreme direction of the court, the jurisdiction of which comprised other free tribunals. The president of the secret tribunal was called the *Freigraf* (free count; for in early times those who administered justice in the provinces in the king's name were denominated *counts*). His associates, who concurred in and executed the sentence, were called *Freischöffen*, their sessions *Freidinge*, and their place of meeting, *Freistuhl* (free bench or court). The *Freischöffen*, who were appointed by the counts, were scattered through all the provinces and cities of Germany. It is computed that their number amounted to 100,000. They recognised one another by certain signs and watch words, which were concealed from the uninitiated; and they were hence called the *Wissenden* or *illuminati*. They bound themselves by a tremendous oath; for they vowed "to support the holy Feme, 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 between heaven and earth." They acknowledged the emperor as their superior, 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 assemblies of the tribunal were open or secret. The former 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. The accusation was made by one of the *Freischöffen*, who, without further proof, declared 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 neighboring place; the accuser remained unknown. If, after the third summons, the accused did not appear, he was once more cited in a solemn session of the court, which was called the secret *Acht*, or *Ban*, and, if still contumacious, was given over to the *Freischöffen*. The first *Freischöffe* who met him, fastened him, not to a gibbet, but to a tree, to indicate that he was put to death by one of them. If the condemned made any resistance, it was lawful to destroy him outright. They then left their knife by the corpse, to show that it was not a murder, but a punishment inflicted by one of the *Freischöffen*. How many judicial murders were perpetrated in this manner, from revenge, interested motives, or malice, may well be imagined. The *Freischöffe* who gave the condemned a secret hint for his escape, was himself punished with death. With the greatest reason may we call these secret tribunals the most execrable and monstrous perversions of ju-

dicial institutions which have ever existed among civilized nations. Similar societies existed in Italy. (Stolberg's *Travels in Italy*, III, p. 443.) Paul Wigand has thrown light upon this subject in his work *Das Femgericht Westfalens*, 1825.

FEME COVERT, in law, signifies a married woman, in contradistinction to a *feme sole*, or single woman. By the common law of England and the greater part of the U. States, the legal capacity of a woman to contract, and sue or be sued, separately, ceases on her marriage. By the act of marriage, her husband becomes a party to her contracts, existing at the time of the marriage. He is liable to pay her debts, or he may collect for his own use the debts due to her. All her personal property also becomes his, and he may reduce it to his own possession. And if she makes a contract during the marriage, it is his contract as far as it has any force. By the civil law, the wife's legal capacity is not merged by the marriage to nearly the same extent. She holds her property separately, and may, in respect to it, commence and defend suits independently of her husband; and so she may contract, in respect to her property or her separate business, independently of her husband. While lord Mansfield was chief justice of the king's bench in England, it was decided by that court, that, when a husband and wife voluntarily separated by an agreement made between themselves for this purpose, and an allowance was made by the husband to the wife for her support, the wife might be sued, separately, on her contracts for articles used in her ordinary course of living. This decision was doubted, from time to time, and finally overruled in the time of lord Kenyon, the successor to lord Mansfield. But if the husband is transported beyond sea, outlawed, or condemned to imprisonment for life, or the parties are divorced from the bonds of matrimony, or from bed and board, the wife's capacity to contract, and to sue in her own name, for causes of action accruing subsequently, will be revived. So in courts of equity, following, in this respect, more nearly the civil law, a wife may maintain suits separately from her husband, where this is necessary in order to the attainment of justice. An exception is also made, by a particular custom in London, in favor of trade; for a *feme covert* trader in that city may contract, and sue or be sued, in her own name, in concerns relating to her trade.

FENCING; the noblest branch of gymnastics. (q. v.) Fencing is divided into fencing with the broad sword and the small sword; the latter being the higher and more perfect, and highly useful in the physical education of the male sex, as it gives strength and flexibility to the limbs, quickness and accuracy to the eye, and coolness and self-possession to the mind.

FEN; a place overflowed with water, or abounding with bogs; as the bogs in Ireland, the fens in Lincolnshire, Kent and Cambridgeshire. These fens abound in duck, teal, mallards, pike, eels, &c., and an herbage that is very nourishing to sheep and cattle.

FÉNÉLON, François de Salignac de la Motte; 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 chateau Fénélon, in Perigord, of a family illustrious in church and state. A gentle disposition, united with great vivacity of mind, and a feeble 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 so amiable a 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 24, Fénélon took holy orders, and performed the fatiguing duties of the parish of St. Sulpice. Harlay, archbishop of 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 labors, 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 honor of Fénélon, that he would not accept this post, except on condition that no other means should be employed than those of charity and argument. In 1681, 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 Berri. Fénélon was successful in forming the mind of the young duke of Burgundy, heir presump-

tive 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 Cambray. A theological dispute (see *Quietism*) with Bossuet, his former instructer, 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 1825, in which he speaks bold truths to the deceived monarch. (*Lettre de Fénélon à Louis XIV, avec Facsimile*, 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 in the departments of philosophy, 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 manifested 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, Protesilaus Louvois, Idomeneus the exiled king James, and Sesostris Louis XIV. 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 7th of January, 1826, his statue, executed by the sculptor David, was placed at Cambray. Bausset wrote The Life of Fénélon, from original papers; and Champollion-Figeac has published a collection of his letters never before printed. The *Œuvres choisies de Fénélon*, with his eulogy by La Harpe, and a biographical and critical notice by M. Villemain, appeared at Paris, 1825, in 6 vols.

Fennel (*anethum fœniculum*); a tall plant of the natural order *umbellifera*, bearing umbels of small yellow flowers, and finely divided leaves. By cultivation, the seeds lose their acrid properties, and acquire an agreeable flavor; 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 odor, and does not, ordinarily, exceed 18 inches in height. Fennel seed is extensively exported from France to Great Britain, and is said to be employed in the latter country in the manufacture of gin.

Fenton, Elijah, an English author and poet of considerable talent, as well as learning, was born in 1683, at Shelton, near Newcastle, in Staffordshire. He was of an ancient and respectable family, but the youngest of 12 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 (translating 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 favor, 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, 1723; 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 and facility of versification. His tragedy of Mariamne also maintains a respectable rank among similar dramatic productions.

Feod, or Feud. (See *Feudal System*.)

Feodor Iwanowitsch; court painter to the duke of Baden. This artist was born in 1765, in a Calmuck horde, on the frontiers of Russia and China. He knew nothing of his family, and the recollections of his youth went no farther back than to

his capture by the Russians. As he was carried away by the Russians, he must have belonged to the Torgots, who had placed themselves under the protection of the Russians, but, on account of some disputes with the Muscovites, deserted their country, and went over to the Chinese. During this flight, a small party of the horde was surrounded on a mountain by the Cossacks, and, offering resistance, most of them were slain, and the rest made prisoners. Feodor yet remembers this attack. A female, who, he thinks, must have been his mother, made every exertion to save him, but without success. The boy, then between five and six years old, was taken to St. Petersburg, and placed under the protection of the empress, from which it may be conjectured, that he belonged to a family of Calmuck princes, which was confirmed by a Russian officer who was present at the attack. At his baptism, he was called Feodor Iwanowitsch. The empress Catharine sent the boy as a present to the princess Amelia of Baden. This princess provided for his education. He displayed a love for painting, labored assiduously, went to Italy, and remained seven years in Rome, where his talent for the art was developed in various ways. Thence he went with lord Elgin to Greece, and sketched many remains of ancient sculpture, for the knowledge of which we are indebted to the zeal of the English traveller. He then accompanied that nobleman to London, to superintend the engraving of the Elgin collection. After a residence of three years in that capital, he returned to Carlsruhe, and was appointed court-painter by the late duke Charles Frederic. Nature formed this artist rather for a sculptor than a painter, for the plastic principle prevails throughout his works; and, as he executed most of them *en camaieu*, he could approach nearer to the effect of relief. By the constant study of antiques and of the old Florentine masters, he attained, in perfection, their precise, severe and grand style. The quiet, which the sacredness of the subject demands, is the principal characteristic of his religious compositions; but, in his bacchanalian pieces, all is life and motion, uniting the fire of Guilio Romano with the boldness and strength of Buonarroti. His figures display an astonishing variety, and an individuality which could be produced only by an artist, who looked on living men with a free and penetrating eye. One thing he has never attained—the power of representing female grace. Although his ladies do not always want dignity, still traces of sensuality are often mingled with it. His figures are too contracted, and he is too fond of disposing drapery in a multitude of small folds. He has etched, in a masterly manner, some pictures; among others, a descent from the cross, by Volterra.

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. Ferdinand was of 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 in Germany as he would otherwise have 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 excited against every deviation from the decrees of the council of Trent, and he obstinately adhered to bigoted and narrow views of religion. The retreat of the Bohemian forces, who 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 (1619). 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 *Calixtines*.) 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 his measures. His generals, Tilly and Wallenstein, defeated 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, Kauffburen 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 by France and assisted by the Protestants, 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 arch-duke Ferdinand, over Bernard, duke of Weimar, at Nördlingen, and the separate peace with Saxony (Prague, 1635), 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 from Luxembourg by the Spanish troops, 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 vigor. Baner (q. v.) defeated the imperial and Saxon forces at Wittstock, 1636, and drove them out of Hesse; and Ferdinand died Feb. 15, 1637, without having accomplished his design of destroying Protestantism and political freedom in Germany.—3. His son, Ferdinand III, the victor of Nördlingen, succeeded him. He was more disposed towards peace than his father. Baner, and Bernard, duke of Weimar, repeatedly 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 the diet, yet he was unable to accomplish his objects. At last, the preliminaries of Hamburg were concluded (1641), by the articles of which a general congress was assembled at Münster and Osnabrück, for the purpose of negotiating a peace. A long time elapsed before this congress commenced its session, and, in the mean time, as there was no 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 determined to accede 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 1653—54, some important changes were made in the administration of justice. Shortly before his death (1657), Ferdinand concluded a league with the Poles against the Swedes.

Ferdinand V, king of Arragon, 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 foundation for the union of the different Spanish kingdoms, which was finally completed 42 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 ascendency in Europe by the acquisition of Naples (1505), by means of his general, Gonzalvo of Cordova, and by the conquest of Navarre (1512); but his policy was deceitful and despotic. These stains obscure the great qualities which made him the first monarch of his time. His efforts to aggrandize himself, and confirm his power, and his religious bigotry, led him into great errors. For the purpose of domineering 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 aphrodisiac, given him 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 into his own hands Jan. 12, 1767. 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 was, therefore, extremely ignorant, and could never 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 inviting boys in the street to visit him, &c. On feast days, he loved to play with the children of the lazzaroni, and, even in his later days, used to enter into conversation with these people, who, in their turn, called him by the familiar epithet *nasone* (long nose), he having the nasal elongation common to the Spanish Bourbons. Ferdinand thus became the favorite of the people. In 1768, he married Maria Caroline, daughter of the empress Maria Theresa. His wife soon acquired a decided influence over Ferdinand. Tanucci was still prime minister. He abolished, in 1764, the feudal tribute of a white horse, paid annually to the pope; but, having lost the favor of Charles III of Spain, he gave in his resignation in 1777, and was succeeded by the marquis Sambuca. The king was now prevailed upon by his wife to engage a little more in the affairs of government; but he did nothing without her advice. Sambuca therefore attempted to alienate the king from his wife by means of a beautiful English woman, who had married a Frenchman (Goudar) at Naples; but the queen discovered the plot, and M. and Mme. Goudar were banished from Naples. This event contributed to strengthen the influence of the queen, and a letter of Sambuca's to Madrid, in which he gave an unfavorable account of the queen, having been intercepted, he was obliged to retire to his native city, Palermo, in 1784. Acton (q. v.), who was his successor, followed implicitly the wishes of the queen; and the cabinet of Madrid now lost all influence in that of Naples, which became more closely united with Austria and England. But the French revolution soon involved in its consequences this country, one of the worst governed in Europe. As the cabinet of Naples hesitated to comply with the demand of France to renounce all connexion with England, La Touche appeared with a French squadron before the capital, and compelled the court to accept the prescribed conditions. But, after the death of Louis XVI, Ferdinand joined the coalition against France, and took part in the general war from 1793 to 1796. After two years of peace, the victory of Nelson at Aboukir again engaged Ferdinand against the French, who, on the defeat of the Neapolitans under general Mack, took possession of the whole kingdom (Jan. 23, 1799), and proclaimed the Parthenopean republic—an act which the situation of affairs probably rendered necessary, because it was not possible to establish a new monarchy. Yet no one acquainted with the character of the Neapolitans, could, for a moment, have expected the duration of the republic. The court, with Acton, had already fled (Dec. 24, 1798) to Palermo. But, June 21, 1799, the capital again fell into the hands of the royalist army, under cardinal Ruffo, and many adherents of the republic were executed. The court did not return to Naples till January, 1800, when a treaty was concluded between Spain and the first consul, by which the

integrity of the kingdom of the Two Sicilies was guarantied. Notwithstanding this, by the peace with France (Florence, March 28, 1801), Naples was obliged to cede the Stato dei Presidj, &c., and to receive French troops into the kingdom—a measure necessary for France, on account of the well known insincerity of the Neapolitan cabinet. In the treaty of neutrality between 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 Russians were landed. Napoleon, in consequence, sent 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 English; but the queen becoming dissatisfied with the latter, Ferdinand, who had always governed 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 favorites, 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 Göthe (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 the neighborhood of which she died, Sept. 8, 1814. The English then prevailed upon the king to take the reins of government again into his own hands. The congress of Vienna finally reëstablished 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 Partana, 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 reëstablished 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 rendered himself extremely odious. Almost all the good regulations which Joseph and Murat had established for the promotion of agriculture, education, the civilization of the lazzaroni, &c., were abolished. In the peace with Algiers, concluded under the mediation of England, Ferdinand obliged himself to pay 25,000 piasters 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 reëstablished 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 *studj*, in Naples, calls him the *most invincible.* 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. Leucio (1773), of which he wrote a description himself. The abbé Clemaron translated it into French, under the title *Origine de la Population de S. Leucio et ses Progrès, avec les Lois pour sa bonne Police, par Ferdinand IV.*

FERDINAND III, Joseph John Baptist, brother of the emperor Francis I, grand-duke of Tuscany, arch-duke of Austria, &c., born May 6, 1769, succeeded his father, the emperor Leopold II, as grand-duke of Tuscany, July 2, 1790. This prince, whose character was at once mild and firm, governed his country in the spirit of his father. As a friend of peace and of the arts, he preserved a strict neutrality in the war with France, and was the first sovereign who acknowledged the French republic (Jan. 16, 1792), and entered into diplomatic connexions with it. This policy offended the courts of London and St. Petersburg, and the English government, in September, 1793, required the grand-duke to dismiss the ambassador of the republic, and break off all commercial intercourse with France. As this demand was not complied with, the British

ambassador, lord Hervey (Oct. 8), threatened the bombardment of Leghorn, and a descent from the fleet of admiral Hood, who showed himself off the harbor, if the grand-duke did not renounce his neutrality within 12 hours. Tuscany was thus obliged to accede to the coalition. Ferdinand, however, still avoided all offensive regulations, and would not allow the fabrication of false assignats in his states. When the French army afterwards took possession of Piedmont, Ferdinand was the first sovereign who seceded from the coalition. He sent count Carletti to Paris, who concluded a treaty Feb. 9, 1795. The English, however, violated the neutrality of Tuscany, which was recognised by France, on which account Bonaparte took possession of Leghorn, June, 1796, and seized the English property there. By way of reprisal, an English fleet (July 10), took possession of Porto Ferraio, in Elba. The French directory wished to unite Tuscany with the Cisalpine republic, but the grand-duke, by a treaty concluded February, 1797, between Manfredini and general Bonaparte, reëstablished the neutrality of his states, whereupon the English abandoned Porto Ferraio, and the French Leghorn. Ferdinand paid a sum of money to the French government, and sent some masterpieces of art, among which was the Venus de' Medici, from the Florentine gallery, to the museum of Paris. The intrigues of the revolutionary party having rendered it necessary for him to arrest many of his own subjects, and to banish those foreigners who fomented these disturbances, he conducted in this affair with the greatest moderation; but the political condition of Italy compelled him to treat with the court of Vienna, where he sent Manfredini to conduct the negotiations. The French directory, therefore, demanded of him, in the beginning of 1798, a definitive declaration of war or alliance. The troops of the king of Naples then took possession of Leghorn, in December, and it was only by the payment of large sums of money, that the grand-duke could procure their removal, when the French troops, under Serrurier, also evacuated Tuscany. In consequence of the violation of the treaty of Campo-Formio, France declared war against Austria and Tuscany, in March, 1799, and again occupied the grand-duchy. Ferdinand retired to Vienna. By the treaty of Lunéville (1801), he surrendered Tuscany (see *Etruria*, and *Tuscany*), receiving as an indemnity, by the treaty of Paris (Dec. 26, 1802), the duchy of Saltzburg, with the dignity of elector, Berchtesgaden, three quarters of Eichstädt, and half of Passau, the united revenue of which amounted to only half of that of Tuscany. By the peace of Presburg (1805) he was obliged to surrender his electorate to Austria and Bavaria, receiving in return Würtzburg. By his accession to the confederation of the Rhine (Sept. 25, 1807), he lost his dignity of elector, and was made grand-duke of Würtzburg. Napoleon distinguished this prince in various ways. He announced him to the Poles, in June, 1812, as their future king. The peace of Paris (May 30, 1814) restored him 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 dei 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, with the design of effecting the independence of Italy, took the field against Austria. Ferdinand retired to Pisa and Leghorn, but returned to Florence April 20, 1815, after the defeat of the Neapolitans by the Austrian general count Nugent, at Pistoia (April 10). By the treaty of Paris, of 1817, it was provided, that, on the death of Maria Louisa, arch-duchess of Parma, Lucca should also be added to Tuscany, on condition that the arch-duke should cede to the duke of Reichstadt his Bohemian states. Ferdinand lost his first wife, a Neapolitan princess, in 1802, 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, Leopold II, born Oct. 3, 1797, married to Maria Anna, daughter of prince Maximilian of Saxony.

Ferdinand VII. It is very difficult to attain an accurate idea of the character of individuals in high stations. Few men have been portrayed oftener than the present king of Spain, and fewer have been so imperfectly understood. Ferdinand VII, king of Spain (*and of the Indies*, as he styles himself), is 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 and sickly constitution, and suffered a variety of 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 bishop of Segovia, and a man of 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 insurmountable 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 and correspondence, except with the few imbecile 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 soon opened the eyes of her husband to the scandalous proceedings of the court. Ferdinand, under the influence of the dukes of San Carlos and Infantado, became jealous of his wife, and even offered her some gross insults. After a most difficult labor 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 Braganza, princess of Portugal, who died in December, 1818, in a fit. An operation was performed to extract the fœtus 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 wife, Maria Christina (born 1806), the present queen, 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 Infantado. Napoleon was consulted by Ferdinand in the year 1807. Count Beauharnais, the ambassador of Napoleon, promised Ferdinand the support of his master. The project being discovered, it was frustrated. The people, 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 step 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 favor of his son. Immediately after the abdication, the ex-king, with his queen, departed for France. Soon after, Ferdinand VII 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 intimated to him that he should go 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; after which the crown was conferred by 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 Bordeaux, thence to Marseilles, and afterwards to Rome. Ferdinand was sent to Valençay, 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 confessor, and several of his attendants, reached the Catalonian frontier March 24, 1814. Marshal Suchet was charged with the safe conduct of the king to the frontiers; and, on the latter's arrival at the limits of the Spanish territory, the decree of the cortes and of the regency was immediately communicated to him. During his journey, nothing could exceed 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 proceedings then to any other motives than those of the basest hypocrisy. Instead of taking the road prescribed 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 celebrated 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 requested and required to accept. The cardinal of Bourbon went to obtain his signature and oath; but, on being admitted to an audience, the king insisted on his conforming to the ceremony of ancient usage, 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 emoluments. At length, Ferdinand judged himself strong enough, and his decree of Valencia, dated May 4, was issued. The cortes were denounced as an illegal body. The decree, among other things, says, "But concerning the labors of the present assembly, I declare, 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 condition, 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 treason, and punished with an infamous death. From the promulgation of the decrees of May 4, may be dated what has not unappropriately been denominated the *reign of terror.* Ferdinand, supported by traitors to their oaths, pursued the most despotical 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 thronged 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 rights! Riego raised the cry of liberty, and order began to be restored. Ferdinand accepted the constitution 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, reëstablishing the inquisition. During the time of the constitution, he was constantly plotting its destruction, as several chiefs of the royalists (called the *serviles*), who were punished, and others who were not, declared on their trials. When the armies of France entered Spain, in 1823, under the command of the now fugitive dauphin of France, then duke of Angoulême, he left Madrid for Seville, where he remained for a few months, and 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 capitulation having arrived, his majesty departed from Cadiz to meet his cousin of Angoulême, 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 1. Since that epoch, Spain has been subjected to a new and terrible despotism. We trust that the period of her deliverance is near.—Ferdinand is a man totally without character, and, without being naturally bad, has done more injury to the unhappy nation which he governs, than if he had been a Nero or a Caligula. His person is not handsome; he is somewhat inclined to corpulency; has fine eyes and a most beautiful hand; his face is marked with the general features of a Bourbon; his nose is aquiline, and almost covers his mouth, threatening to come in contact with his chin; his height is about five feet five or six inches. One of his principal favorites is a low-born man, once the sweeper of the palace stairs, now a groom of the royal chamber, called *Pedro Collado*, but generally known by the nickname of *Chamorro*. This man's good will is the surest road to the graces of the king.

Ferdusi, or Ferdousi, Tshak Ben Scheriffschah, 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 Ghizne (Ghazne), where the sultan Mahmoud then held his court, and attracted and collected the poets and learned men by his patronage. He entered the gardens of the royal palace, and found Anasari, the poet of the sultan, in one of the arbors, 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 conversation 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 Ansseri, promising him a piece of gold for each verse. Ferdusi devoted 10 years of the latter part of his life to this work, and produced a historical poem of 60,000 verses, entitled *Shanameh* (Book of the Kings), containing the history of the Persians from Nourshirvan to Yezdegerd, and consisting, properly, of a succession of historical epics. The achievements of the hero Rustan, the Persian Hercules, form one of the finest episodes. Ferdusi presented his poem to the sultan, whose favor 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 Mahmoud, which he had inserted in his poem, and composed a bitter satire on the sultan (to be found in Jones's *Poëseos Asiaticæ Commentar.*). Compelled to fly, he retired to Thus, where he lived in concealment. Meantime, Mahmoud became sensible of his injustice, and, having ascertained that Ferdusi was still alive, and in want, he ordered 12 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 *Shanameh* 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 *Sohreb*, appeared in Calcutta, 1814, with an English translation, by Atkinson. In 1811, professor Lumsden began to publish the whole, which was estimated to make 8 vols. fol.; only one volume has as yet appeared. Görres, 1820, gave an abridgment of the whole in 2 vols. An English translation, commenced by Champion, 1788, is still unfinished. Fragments may be found translated in Jones's Commentaries, in Wilken's *Persian Chrestomathy*, in Schlegel's *Europa*, in the *Deutschen Merkur*, in the *Fundgruben des Orients*, and in Von Hammer's *Geschichte der Schönen Redekunste Persiens.*

Ferguson, Adam, an eminent 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 removed to Edinburgh, to study for the ministry. 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 Ches-

terfield 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 3 vols. 4to. In 1793, he published his lectures in the form of a Treatise on Moral and Political Science, in 2 vols. 4to. He died February 16, 1816.

Ferguson, James, an eminent experimental philosopher, mechanist, and astronomer, was born of 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 neighboring gentry, they enabled him to obtain instruction in mathematics and drawing, in which latter art his improvement was so rapid, that he repaired to Edinburgh, and drew portraits 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 hearers was George III, then prince of Wales, who afterwards settled on him a pension of £50 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 astronomy, 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, 8vo.; Astronomy Explained; Introduction to Astronomy; Tables and Tracts; Lectures in Mechanics, 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, 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 Scotch 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 church-yard, Edinburgh, where Burns erected a monument to the memory of this kindred genius. His poems have been often printed; and an edition, published at Glasgow, has an account of his life, by D. Irving, prefixed.

Fermentation; the spontaneous changes which vegetable matter undergoes when exposed to ordinary atmospherical temperature. So long as vegetable substances remain in connexion with the living plants by which they were produced, the tendency of their elements to form new combinations 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 gluten, 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; at a third, 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 *putrefactive* fermentation. The only substance known to undergo the saccharine fermentation is starch. 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 genera-

ted. 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 for establishing the vinous fermentation are the following, viz., the presence of sugar, 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 bent tube, the extremity of which opens under an inverted jar full of water or mercury, apply 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 stratum of froth. The yeasty matter will then disengage 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 changes which are 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 atmospheric air, having been excluded by the nature of 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, of the apple, &c., ferments spontaneously, but not without enjoying 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 acidulous principle of the mature 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 deposited during the vinous fermentation; and an additional quantity subsides, constituting the *crust*, 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 of which, therefore, they can never be deprived. 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 admit of being long kept; for as soon as 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 a free acid, and are greatly disposed to pass into the acetous fermentation. The sour taste is concealed partly by free sugar, and partly by the bitter flavor of the hop, the presence of which diminishes the tendency to the formation of an acid. The fermentative process, which takes place in dough mixed with yeast, and on which depends the formation of good bread, has been supposed, by some, to be of a peculiar kind, and accordingly designated by the name of the *panary 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 acetous fermentation takes place. This change is attended with an intestine movement, and the developement 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 vigor. It is necessary to distinguish between the mere formation of acetic acid, and the acetous 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 acetous 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 acetous fermentation consists in the conversion of 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 acetous 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 renders it liable to several ulterior changes. In this country, it is more generally the product of cider. 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 carbon and hydrogen prevail, such as the oils, resins, and alcohol, do not undergo the putrefactive fermentation; nor do acids, which contain a considerable excess of oxygen, manifest a tendency to suffer this change. The conditions requisite for enabling the putrefactive process to commence, are moisture, air, and a certain temperature. The temperature most favorable is between 60° and 100° Fahr. The products of the process may be divided into the solid, liquid and gaseous. The liquid are chiefly water, together with a little acetic acid and oil. The gaseous products are light, carbureted hydrogen, carbonic acid, and, when nitrogen is present, ammonia. Pure hydrogen, and, probably, nitrogen, are sometimes disengaged. Another elastic principle, supposed to arise from putrefying vegetable remains, is the noxious *miasmata* of marshes. The origin of these, however, is exceedingly obscure. The solid product is a dark, pulverulent substance, consisting of charcoal, combined with a little oxygen and hydrogen, which, when mixed with a proper quantity of earth, is called *vegetable mould.*

Fernandez, or Juan Fernandez, an island in the South Pacific ocean, about 110 leagues west of Chile; about 4 leagues long, and hardly 2 wide; of an irregular shape; lon. 78° 52′ W.; lat. 33° 40′ S. It is noted for the refreshments it has afforded to navigators from its wild goats, vegetables and water. The governor of the island is appointed by the president of Chile.—Alexander Selkirk, a Scotch sailor, being left on this island by his captain, lived here from the year 1705 to 1709 in solitude. This circumstance gave rise to the celebrated romance of Robinson Crusoe, by De Foe.

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 place of 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 60 miles in circum-

ference. 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 inhabitants, who were mostly Protestants, were compelled to leave their country to escape religious persecution. Voltaire purchased an estate there in 1762, and endeavored, 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 who came from every part of the civilized world to see 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 600 inhabitants. The château 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 Blumenhagen, in the Uckermark, where his father was a common laborer. His early years were those of a talented youth struggling with poverty and other 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 Jena, 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 extraordinary professor at the university of Jena. In 1804, he received an appointment at Weimar, where he died Dec. 4, 1808. His *Römische 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 Sprachlehre* (Italian Grammar), second edit., Tübingen, 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 Schoppenhauer.

FERNS (*filices*); a family of plants, included by Linnæus in his class *cryptogamia*. They are herbaceous, or shrubby, and some tropical species are arborescent. 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 palmated, 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 widely diffused, 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 U. 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 Anxur (Terracina), was consecrated to her, and is very celebrated. Emancipated slaves received a cap in her temple as a badge of freedom.

FERRAND, Anthony, count, peer of France and minister of state, was born in 1752. He early showed himself opposed to the new political principles which were developed in 1789. He emigrated, and remained with the prince of Condé during the whole of his first campaign. When the first consul granted the emigrants permission to return, Ferrand availed himself of it, and occupied himself with literary pursuits. His *Lettres politiques et morales d'un Père à son Fils* were in part suppressed by order of the authorities, but obtained him a flattering letter and a ring from the emperor Alexander. When

Mallet attempted to overthrow the imperial government, Ferrand was suspected of being engaged in the conspiracy, but nothing was proved against him. In 1814, he distinguished himself by his activity in promoting the restoration of the Bourbons, for which Louis XVIII appointed him minister of state, and postmaster-general. He was one of the members of the committee chosen to examine the demands of the emigrants for the restoration of their estates. In his speech on this subject, he extolled the services of the emigrants, and qualified those who had always been devoted to the Bourbons by the epithet of *rectiligne*. He was then, for a short time, minister of the marine. On the return of Napoleon from Elba, he surrendered his office of postmaster-general to M. de Lavalette, who had held it before the restoration. Lavalette gave him a passport to enable him to quit Paris, which Ferrand, two years later, brought forward against Lavalette to prove that he had usurped the office, because it was dated before Napoleon's arrival in Paris. After the Bourbons had a second time recovered the throne of France, through the aid of the allies, Ferrand was reëstablished in all his offices and titles, and made a peer. On the organization of the French academy, he was appointed a member by the royal order. In the chamber of peers he has, of course, always voted with the *rectilignes*. He has written a great deal.

Ferrara; formerly a duchy in Upper Italy. The ancient house of Este, originally from Tuscany, and distinguished as early as the 9th 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 Cæsar, 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 endeavored 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 3500 houses, 23,600 inhabitants, upwards of 100 churches, a university, a museum, &c. Under the dukes of Este, it contained 80,000 inhabitants, and the most splendid and refined court of Italy. It is now comparatively solitary and forsaken. The streets are broad and regular, but deserted; its palaces large and splendid, but little inhabited. The castle, the residence of the papal legates, still contains some remains of elegant fresco paintings, by Dossi and Titian. In the churches are 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 manuscripts, antiquities, coins, &c., there are many monuments of the former glories of the city, is a more pleasing edifice. Here is shown Ariosto's ink-stand and chair, the manuscript of his satires, several letters, 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 Fido*, by Guarini, and many remains of Tasso, among 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 *Este*, and *Tasso*). More pleasant are the recollections of Ariosto. One of the squares in the city is called the *Piazza Ariostea*, in honor of him; and his house, covered with inscriptions, is revered as a sacred spot by the inhabitants and by 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; born at Lisbon, 1528. He carried to perfection the elegiac and epistolary style, already attempted with success by Sà de Miranda, and added to Portuguese poetry the epithalamium, 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 reading of Horace, the desire of imitating Miranda, and the natural severity of his genius, led him to cultivate conciseness in his style, which he carried so far as almost always to sacrifice harmony to thought. All his works are distin-

guished 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 *Poemas Lusitanos* appeared complete at Lisbon, first in 1598, 4to., and *Todas as Obras de Ferreira*, Lisbon, 1771, 2 vols.

Ferreras, Juan de; a Spanish historian, born at Labañeza, 1652, of a noble but poor family. A paternal uncle superintended the education of the young Ferreras, and sent him to the Jesuit's college of Montfort de Lemos. After having learned the Latin and Greek languages, he studied poetry, oratory, philosophy and theology, in three Dominican monasteries. He distinguished himself every where by his penetration and diligence, and gained the affections 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 as a preacher. In his intercourse with the marquis de Mendoza, a lover of the muses 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 theology. His reputation continually increased, and he was gradually advanced from one station of honor 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 dictionary, 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 several years, he died in 1735, aged 83. He wrote, in all, 38 works, some of which have never been printed. The *Historia de España* (Madrid, 1700—27, 16 vols. 4to.) is the most important, and 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, although generally admitted by naturalists as a distinct 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 color 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 weasels. It is lively and active, and an inveterate destroyer of rabbits. If a dead rabbit be presented for the first time to a young ferret, he will fly at it, and bite it with great fury; but if it be alive, he will seize it by the throat, and suck its blood. 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 5 to 9 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 color than the ferret.

Ferro, the most western of the Canary Isles, belongs to the crown of Spain. It is about 80 square miles in extent, and has 4000 inhabitants. A large linden tree upon this island has a cloud perpetually resting on it, the moisture of which it collects in drops upon its leaves, and thus fills a cistern. Geographers formerly drew their first meridian through this island, which is 20° W. lon. from Paris, and 17° 40′ W. of Greenwich.

Ferrocyanic Acid. (See *Prussic Acid.*)

Ferté; a prefix to many French geographical names, as *Ferté-Alpes*, *Ferté-Bernard*. It is derived from *firmitas*, Latin which, in Low-Latin, signifies a *small fortress*.

Fescennine 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 sung them particularly at the harvest festivals, accompanying them with mimic motions. The emperor Au-

gustus prohibited them, as tending to corrupt the public morals.

Fesch, Joseph, cardinal, archbishop of Lyons, uncle of Napoleon, was born at Aiaccio, January 3, 1763. His father, Francis Fesch, of Basle, served as lieutenant in the Swiss regiment of Boccard, in Corsica. His mother's name was Ramolini. She was a widow when she married his father; and her daughter by a previous marriage, madame Letitia (born 1750), is celebrated as the mother of Napoleon. Till his 13th year he pursued his studies in Corsica, and afterwards in the seminary at Aix, where he was residing when the representatives of the states were first assembled. During the reign of terror, he retired to Savoy, to the army of general Montesquiou, where he was appointed commissary. He held this office in 1796, in general Bonaparte's army in Italy. He devoted himself again to the study of theology, when his renowned relative became the head of the French government. After the concordate of 1801, he was made archbishop of Lyons, and, in 1803, appointed cardinal. In July, 1803, he arrived at Rome, in the character of French ambassador. In this office he acted with sagacity and wisdom. In 1804, he accompanied the pope on his journey to Paris to crown Napoleon. In January, 1805, Napoleon appointed him grand-almoner, and, on February 1, made him a senator, on which occasion he gave him the *grand-cordon* of the legion of honor. In July, the king of Spain conferred on him the order of the golden fleece. In 1806, Dalberg, elector of Mayence, arch-chancellor of the German empire, afterwards prince primate of the confederation of the Rhine, made him his colleague, and destined him for his successor. Napoleon refused his sanction to this appointment. Fesch declined the offer of the archbishopric of Paris in 1809, and lived in disgrace, at his see of Lyons, till 1814. At the approach of the Austrians, he fled to Roanne, and thence retired to Rome with madame Letitia Bonaparte. After Napoleon's return from Elba, he returned again to Paris, with the other members of the family, and was made a peer; but after the battle of Waterloo, he was again compelled to leave France. He has since lived in Rome, and was much esteemed by Pius VII. With the same firmness with which he had formerly opposed those measures of Napoleon, which he disapproved, cardinal Fesch now refused to resign his right to the bishopric of Lyons, at the solicitation of the Bourbons, who, against his will, appointed the abbé de Rohan, a member of a noble family, who had but a short time before completed his studies at a theological seminary, vicar-general of his archbishopric. A papal brief, in 1824, prohibited Fesch from the exercise of his spiritual jurisdiction in the district of Lyons. Cardinal Fesch has collected a very fine gallery of paintings, but, within a few years, he has sold a large part of them. The last accounts of the cardinal's health are such that his death may be soon expected. Norvins, in his history of Napoleon, says that cardinal Fesch was more favorably disposed towards the pope than the Gallican church; but we know that Norvins has received a contradiction of this story from a near relative of Napoleon.

Fessler, Ignatius Aurelius, doctor of theology, a German author, was born July, 1756, at Czurendorf, in Lower Hungary, where his father kept an inn. His mother, a strict Catholic, educated him, and intended him for the cloister. He entered the order of capuchins in 1773, and was transferred to Vienna in 1781. In 1783, he was appointed professor of the Oriental language and the interpretation of the Old Testament at the university of Lemberg, by the emperor Joseph, to whom he had communicated much information respecting the corruptions of the monasteries. He became odious to the monks on this account, and was, by his own desire, dismissed from the order. In 1787, Sidney, a tragedy by him, was performed on the theatre in Lemberg. His enemies denounced this piece as atheistical; and a process was instituted against him, of which he could not expect a favorable result, as the revolution in the Netherlands against the emperor Joseph had just broken out. He therefore fled to Silesia, where he was made tutor to the sons of the prince of Carolath. In 1791, he joined the Lutheran confession, and, in 1796, went to Berlin, where, with the celebrated Fichte, he revised the ritual and the statutes of the royal York lodge. The war between Prussia and France found him the proprietor of a small farm, and the father of a large family. His circumstances were now very much straitened, and he was often reduced to live by the charity of his brother freemasons, as his farm and his literary works were not sufficient to maintain his family. In 1809, he was appointed professor of Oriental languages and philosophy at the Alexander-Newsky-

academy, at Petersburg; but his doctrines were denounced, by a Greek clergyman, as atheistical, and he was obliged to give up his professorship. After several changes of situation, he was appointed superintendent of the Evangelical congregations in the new Russian governments on the Wolga, and consistorial president at Saratow. Lenning, in his Encyclopædia of Freemasonry, frequently mentions Fessler's doings among the freemasons. He has written much. His most important work is his Hungarian History (*Geschichte der Ungarn und derer Landsassen*). He is also known by his historical novels, as Aristides and Themistocles, Matthias Corvinus, Marcus Aurelius, Attila, &c. He has also written other novels, as Abelard and Heloïse, Alonzo, &c. They are all characterized by deep thoughts mixed with religious mysticisms, but cannot be recommended without qualification. He was accused by a Mr. Limmer of having attempted to establish a kind of Jesuitism among Protestants, by means of the Moravian Brethren, with whom he lived for some time, at Sarepta, in Asia.

Festivals and Holidays. It is a deep-seated propensity of human nature to observe, with festive solemnities, the periodical return of certain times, suspending the ordinary business 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 welfare, both in a political and a religious 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 every thing 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 endeavoring to avoid the numerous festivals of the Romish church. In England and North America, almost all the ecclesiastical festivals have either been abolished or are little regarded. In Germany, several are solemnized with very general interest. On the festivals of the ancient Christians, see Augusti's *Denkwürdigkeiten aus der alten Christlichen Archäologie*, &c. (Memorable Particulars of Ancient Christian Archæology, &c., Leipsic, 1817—1820, 3 vols.), and Zyliegan's work entitled *Die Altern und Neuern Feste aller Christlichen Confessionen* (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, inasmuch as, in its opposition to that system, it 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 of the Jews. The divisions of the festivals into classes are very various: they are weekly (as Sunday) and yearly; ordinary, or extraordinary; movable and immovable; great and high (e. g., Easter, Whit-

sunday, Christmas); middle and low; entire and half; old and new; general and particular. The ordinary movable festivals are, e. g., Easter, Whitsunday, &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, introduced among Christians as holy 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 common 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 Savior; to excite thankfulness for the divine superintendence; and to encourage the practice of Christian virtues. It was customary to endeavor 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 holy days and customs, and for the prohibition of all public amusements by which the sanctity of divine worship might be impaired. 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 holy days were *feriæ*, that is, days on which all public and direct labor, 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 appropriated 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 *Agapæ* (q. v.); and, when these were disused, it was made the duty of 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 Savior. This holy season begins with the first Sunday in Advent (see *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 birth-day 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 12 days, were already in use among the plays and amusements customarily observed in those seasons by the Egyptians, Indians and Persians. The birth-day festival of Christmas is immediately followed by three anniversaries of deaths; that in memory of the martyr Stephen, introduced about the fourth or fifth century, 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 Epiphany, 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 earthly existence, until his entrance 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 commemoration of such an important circumstance of sacred history as the birth of the Savior. It is worthy of remark, too, that the very same day, the 6th of January, 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 holy days kept in memory of the death and resurrection of Jesus Christ. After the preparation of the 40 days' fast of lent, palm Sunday opens the Easter holidays. The Greek church kept this day at an early period, but the Latin church first began to celebrate it about the 7th century. On Maundy Thursday, the institution of the Lord's supper, and the washing of the feet of the apostles by our Savior, are commemorated. Traces of this festival are discoverable in the African church as early as the 4th century, and in the following centuries 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 Sunday. The holy Sabbath, or Easter-eve, is the only one of all the Jewish Sabbath days that the Christian church has retained as a holy day. Last of all comes 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 etymology of its name, there is much disagreement among the learned. Easter is a day of rejoicing: the expressions of this joy are peculiarly lively among the Greeks. It is this character of the day which gives such peculiar propriety to Göthe's representation of the effect of Easter morning on the bitter internal strife of his unhappy Faust. 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. The third division, or period, is that of Whitsuntide, 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 Comforter to enlighten and strengthen the hearts of men. The most eminent festival in the season of Whitsuntide is Ascension-day; and, on the octave of Whitsunday, 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 computation of the time till Advent. As to the Ascension and Whitsunday, we may, with certainty, consider them as having been 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 5th century, at the time when the expression θεοτοκος, being opposed by Nestorius, and sanctioned by the council of Ephesus (431) and that of Chalcedon (451), acquired a peculiar importance. The expression itself was already of long standing. The origin of this worship is enveloped in darkness. The festivals relating to the virgin and the other Mary are nine: 1. the feast of the annunciation; 2. the purification of the virgin, or Candlemas; 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 festivals in honor 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 honor of different saints, and angels, and of Christ. The 1st of November is the feast of All-saints. As early as the 4th century, the Greeks observed the octave of Whitsunday, now Trinity Sunday, as a general festival in honor of all martyrs and saints. (See *All-Saints*.) On the 2d of November, the festival of All-souls is observed, as a day of mourning and commemoration of such of the dead as are not yet admitted to the contemplation of their Maker. Odilo of Clugny seems first to have introduced it in his monasteries 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 honor 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 transfiguration of Christ, which was celebrated with great rejoicing, particularly among the Greeks. The worship 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 (September 1). The festival of the holy body of Christ, or *corpus Christi* (see *Corpus Christi*), established in 1264, is observed on the Thursday after Trinity Sunday. On this day, the eucharist is carried in solemn procession, the object of the festival being the preservation of the belief in the eucharist. Luther himself says, in his Table Talk, page 359, "The feast of *corpus Christi* has, of all others, the greatest and best appearance." The great influence of the festivals of the eucharist upon the mind needs not be commented on at present. It is only necessary to notice the advantages which they afforded for the instruction of the populace in religious truth, in former times, when printing and instruction in schools had not yet begun to operate in the dissemination of knowledge. In the 18th century, many feast days of the Catholic church were abolished, or transferred to Sundays. When the national convention of France had, in 1793, on the motion of Robespierre, acknowledged the existence of a Supreme Being and the immortality of the soul, and dedicated a national festival, on the 20th of Prairial, 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 world; 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 childhood; 25. of youth; 26. of manhood; 27. of old age; 28. of misfortune; 29. of agriculture; 30. of industry; 31. of the forefathers; 32. of posterity and felicity. There are 34 religious and four civil festivals observed by the established church of England and Ireland; and the Protestant Episcopal church in the U. States observes 32 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 the U. States.

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 Fétiches* (1760), and is derived either from the Portuguese *fetisso*, a block adored as an idol, or, according to Winterbottom, from *feticzeira*, 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 cock or sheep. They believe 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 every 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 their punishments is death. At Cape Coast there is a public guardian *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 assures the spectators that he receives verbal 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.

FETVA. (See *Mufti.*)

FEUDAL SYSTEM. [The following article relates more particularly to Germany, where this system originated and received its fullest developement; but the account is, in all important particulars, applicable to the other parts of Europe where this system prevailed.] A fee, feud or fief 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 the tenure, while the feudal lord still retains a paramount right (*dominium directum*). A fief is distinguished from allodial 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 passion of the ancient Germans 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 neighboring 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 Cæsar and Tacitus, was bound to the commander by firmer ties than the transient love of war or inconstant 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 chieftain 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 forever branded as a coward. The general of the national militia (*heerbann*), 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 *vasallus*) received no pay except their arms, horses and provisions, and the portion of the spoils, which remained after the chieftain had taken his own share. In the expeditions of particular adventurers against the adjacent tribes, or the Roman provinces, their booty consisted of garments, arms, furniture, slaves. But when the northern hordes broke into 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 fiefs, 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, and unknown to other nations. 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 fief; or, rather, he was invested with it anew. By the usage of centuries this custom became a right; and to deprive one of his paternal fief, 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 1026), by which the feudal possessions of a father were to descend to his son (female fiefs 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 indispensable that those states which were well protected from foreign invasion, though they had no assurance of internal security, should put themselves under the protection 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 neighboring free proprietors of landed property, till they looked with jealousy on the dependent vassals, and submitted to the protection of the oppressor, or some other nobleman, 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 bailiffs (who acted on behalf of

the bishops), whose duty it was to levy and command the army, instead of employing the raw militia, who often forgot their military skill in long-continued peace, preferred their own attendants, now styled the *vassals*, and released such of the king's subjects 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 national 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 unconditional 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 class of men, including the wealthy families, afterwards called the *inferior nobility*, who cultivated their land by means of hirelings or bondsmen, were not anxious to free themselves from the military service; for war was always their favorite employment. But they could not dispense with the protection 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 honor of being received among the vassals of the nobility, and consented to hold their estates as the feudatories of the nearest duke, or earl, or bishop. Often, too, from a feeling of devotion, they became the feudatories of the great religious establishments. This is the origin of the great number of feudal estates in Germany at the present day, with the exception of the north-eastern provinces, formerly Sclavonic, 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 several services, stood in this 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 honorable vassalage to honest but despised patronage, invested some nobleman with their lands, or were invested by him, with the consent of the lord paramount, with a further portion of his feudal territory (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, the possessor of which was bound to defend the castle belonging to his lord. The vassal who directed the defence was called, in the imperial fortresses, a *burgrave*. 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 performed active service, but were afterwards rather a splendid appendage to the court. The four offices of the marshal, the chamberlain, the cup-bearer and the sewer, are the oldest and most honorable, 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 notion in full vigor, which considered none but 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, certainly not before the time of Frederic I), became by degrees hereditary. The splendor 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 multitude of other servants, particularly on the estates of the nobility. Every farmer (*villicus*) 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 indolent to execute the duties of their offices 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 gradually introduced, which were acquired not by military or court services, but by performing certain duties of no great difficulty, amounting to little more than the acknowledgment of the lord's feudal superiority; as by the yearly gift of a horse, a pair of hounds, 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 humor of the feudal lord; such as dancing before the army, performing some trick, offering an egg, a penny, &c. A refusal to perform feudal service, or any other violation of fealty, was styled *felony.* (q. v.) Upon this and other difficulties incident to feudal property, as in cases growing out of 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 duties incident to a fief. As the relation of lords and vassals (at that time 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 immediate subjects of the empire, the latter were thrown into the back ground, and at length nearly forgotten. In the 10th and 11th 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 confounded. If any one was neither a lord 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 lords of Brunswick and Hesse, and the counts in Thuringia, at that period called *dukes* and *landgraves*). 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 infeoff some other person (though the selection depended entirely 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 account of the property attached to it. The dukes, bishops, bailiffs and burgraves, 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 Franconia, Suabia and Westphalia, the counts and abbots took the same course; while in Bavaria, Misnia, Thuringia, Austria and Brandenburg, often wholly forgetful of their dignity as imperial governors, they sunk 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 equal birth. The king formed the first class; 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 or possessions, were the vassals of the emperor, 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, capitanei, valvasores majores, valvasores minores, valvasini* and *soldati;* the English into lords, esquires and freeholders; the Spanish *grandees* (*ricos hombres*, rich men), *escuderos, hidalgos;* and the French *pairs, barons, ecuyers* and *valvasseurs.* The title *ecuyers, escuderos, esquires,* however, belongs rather to chivalry. (q. v.) Besides these ranks, after 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 founded thereon a new sort of power. 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 12th 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 *allodia*, originally, estates gained by lot; *feudum* is from the ancient *fe*, a reward, and *ode*, a possession), has become the code of feudal law over half of Europe. In the north of Germany, Denmark, Prussia, Poland, &c., the old German feudal code still obtains, which differs from the Lombard code chiefly in not acknowledging the right of collateral relations, as such, to succeed to a fief; and in grounding the right of feudal succession, not on descent from the first possessor of the fief, but only on community of possession; so that divisions destroyed the right of inheritance. In place of this community, similar force has been given, since the 12th century, in the above-mentioned countries, to a merely formal union, instituted in the first investiture, and preserved and renewed in all cases of division or death (joint investiture). 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 was not naturally dependent on kings, but kings on it. Indeed, the sovereigns had no other security for their subjection than the feudal oath, and the menaces 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 honor 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 power; while the Britons alone, from the disputes of the kings and the vassals, have been able to establish their present government, with an equal regard to the privileges of both. 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 services of a civil character. The feudal system is a relic 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 overthrow the feudal system—an order 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 structure of a Gothic cathedral, tell us, that the feudal times were the very model of an age of honor and religion. It is

well for them that they cannot test the truth of their opinions by their own experience.

FEUERBACH, Paul John Anselm von, since 1821 royal Bavarian acting counsellor of state, since 1817 president of the court of appeal of the circle of Rezat, member of several orders, and of the law commission at St. Petersburg, &c., was born November 14, 1775, and educated at Frankfort on the Maine, where his father, a lawyer, resided. He studied the Greek and Roman classics in the gymnasium at that place, and commenced the study of philosophy and law at Jena, in 1792. The study of the works of Kant, Locke, Hume, Tetens, Lambert, &c., led him to investigations of the foundation of legal principles. With his mind thus strengthened by philosophical studies, he turned his attention to positive law. In 1798, he wrote his *Anti Hobbes*, and, by an essay on high treason, and a treatise on the design of punishment, first made his appearance among the writers on criminal law. He was also highly popular as teacher of law at Jena, 1799. By the Revision of the fundamental Principles of Criminal Law (2 vols. 1799), and by the Library of Criminal Law, edited by him, with Grolman and Almendingen, he prepared the way for the revision of the penal laws, which he executed systematically in his Manual of the private Criminal Law of Germany (Giessen, 1801—9; nearly all written anew in the edition of 1826). By this work he placed himself at the head of the new school of criminal writers, called *rigorists*, who allow no discretion to the judge, but confine him to a strict administration of the law as set down in the codes and statutes. In 1801, Feuerbach received an ordinary professorship at Jena, in 1802 accepted an invitation to Kiel, where he published, at the suggestion of a learned Bavarian, A Review of the Plan of Kleinschrod for a Penal Code adapted to the Electoral-Palatine-Bavarian States (3 vols. 1804). In 1804, he was invited to Landshut, being the first Protestant and foreigner who received this honor from the superintendents of a Bavarian university, and was commissioned to prepare a plan for a Bavarian penal code. The entire reform of the penal code of Bavaria commenced in 1806, with the abolition of torture, and the regulation of the proceedings against prisoners refusing to plead—an ordinance drawn up by Feuerbach himself. The new penal code for the kingdom of Bavaria, which he had drawn up, received the royal sanction, May 16, 1813, after a previous examination and some alterations. This work has been taken as a basis for the new codes in Weimar, Würtemburg, and other states. In the duchy of Oldenburg, it was adopted entirely, and was afterwards translated into Swedish. At the same time (1807), Feuerbach was commanded by the king to adapt the *Code Napoléon*, as a general civil code, to the situation of the kingdom of Bavaria, which, however, has never gone into operation. Among the works published at that time, by Feuerbach, are, Remarkable Criminal Cases (2 vols. 1808—11); *Themis*, or Contributions to Legislation (1812); and Observations on Trial by Jury (Landshut, 1812). Feuerbach rejected the French jury, and many works were written both for and against his views. In his work On the Publicity of Judicial Proceedings (Giessen, 1821), he has expressed many of his opinions, more explicitly, and shown how a public, judicial process, adapted to the circumstances of Germany, might combine oral and written forms. At the restoration of German independence, 1813, Feuerbach displayed his patriotism and public spirit by several publications; such as On German Freedom, and the Representation of the German People (Leipsic, 1814). About this time, the king appointed him second president of the court of appeal in Bamberg. Feuerbach afterwards travelled into foreign countries, and lived at Munich, devoted to letters, until March, 1817, when he was appointed first president of the court of appeal of the circle of Rezat, at Anspach. This unwearied jurist and scholar occupied his leisure moments with a poetical translation and commentary of the Indian poem *Gita Gowinda*. In the spring and summer of 1821, he visited Paris, Brussels and the Rhenish provinces, by the direction of the king, for the purpose of studying the judicial systems in those places; an account of which he has given in his learned work On the Judicial System and Process in France (Giessen, 1825), in which he has explained the minutest details with clearness and accuracy. The life of this able man entitles him to a place not merely in the annals of literature, but likewise in the history of legislation; and Feuerbach will always be spoken of with veneration, like Beccaria. Some of his works have gone through many editions.

FEUILLANS, in ecclesiastical history; an order of religious clothed in white, 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 Thoulouse, 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 1590.

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 have no intermission, but exacerbations come on usually twice in one day. The genera of continued fever are: 1. *Synocha*, or inflammatory fever, known by increased heat; pulse frequent, strong, and hard; urine high-colored; senses not much impaired: 2. *typhus*, or putrid-tending fever, which is contagious, and is characterized by moderate heat; quick, weak and small pulse; senses much impaired, and great prostration of strength: 3. *synochus*, or mixed fever. 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. *Quotidiana;* a quotidian 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 mid-day, 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 miasmata, or the effluvia arising from stagnant water, or marshy ground, when acted upon by heat, are 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 recession of eruptions, 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 original 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 primæ viæ 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 features shrink, the bulk of every external part is diminished, and the skin over the whole 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 almost colorless; 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 has become regular, hard and full. If the attack has been very severe, 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, scirrhus of the liver, dropsical swellings, and general debility, which, in the end, now 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 quartans 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 description in the system: an emetic will generally answer the purpose, determining the blood powerfully to the surface of the body; or a full dose of opium, assisted by the pediluvium, &c.; ether 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 prevails, the antiphlogistic plan is to be pursued. In the intermissions, in conjunction with a generous diet, moderate exercise, and other means calculated to improve the vigor of the system, tonics are the remedies especially relied upon. At the head of these we must certainly place the cinchona, which, taken largely in substance, will seldom fail to cure the disease, where it is not complicated with visceral affection.

Synocha (from συνεχω, to continue). *Febris synocha;* inflammatory fever; a species of continued fever, characterized by increased heat; pulse frequent, strong, hard; urine high-colored; senses not impaired. This fever is so named from its being attended with symptoms denoting general inflammation in the system, by which we shall always be able readily to distinguish it from either the nervous or putrid. It makes its attack at all seasons of the year, but is most prevalent in the spring; and it seizes persons of all ages and habits, but more particularly those in the vigor of life, with strong elastic fibres, and 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 ones, 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, great intemperance, violent passions of the mind, the sudden suppression of habitual evacuations, and the sudden repulsion 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 lassitude and inactivity, succeeded by vertigo, rigors and pains over the whole body, but more particularly in the head and back; which symptoms 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 color at the sides, and furred with white in the centre; the urine is red and scanty; 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, diarrhœa, hæmorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis is usually preceded by some variation in the pulse. The chief indication in synocha is to lessen the excessive vascular actions by evacuations, and the antiphlogistic regimen. Of the former, by far the most important is blood-letting. Purging is next in efficacy. As the disease advances, however, we must attempt to promote the other discharges, particularly that by the skin. The antiphlogistic regimen consists in obviating stimuli of every kind, so far as this can be done safely; impressions on the senses, particularly the sight and hearing, bodily and mental exertion, &c., must be guarded against as much as possible. The diet

should be of the most sparing kind. The stimulus of heat must be especially obviated by light clothing, or even exposing the body to the air, ventilating the apartment, sprinkling the floor with vinegar and water, &c. When the head is much affected, besides the general treatment, it will be proper to take blood locally, have the head shaved and cooled by some evaporating lotion, apply a blister to the neck, and, perhaps, stimulate the lower extremities. In like manner any other organ, being particularly pressed upon, may require additional means to be used for its relief, which will be different in different cases.

Typhus (from τυφος, stupor); a species of continued fever, characterized by great debility, a tendency in the fluids to 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 petechiæ, or purple spots, which come out on various parts of the body, and the fetid 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 a person laboring 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 it is, that, 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 damp 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 labor, continued want of sleep, &c., are most liable to it. On the first coming on of the disease, the person is seized with languor, dejection of spirits, amazing depression, and loss of muscular strength, universal weariness and soreness, pains in the head, back and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb 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, load 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 over 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 deposites a black and fetid sediment; the stools are dark, offensive, and pass off insensibly; hæmorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots or petechiæ appear on its surface; the pulse intermits and sinks; the extremities grow cold; hiccoughs ensue; 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 petechiæ appear, although in some instances recoveries have been effected under the most unpromising appearances. An abatement of febrile heat and thirst, a gentle moisture diffused equally over the whole surface of the body, loose stools, turbid urine, rising of the pulse, and the absence of delirium and stupor, may be regarded in a favorable light. On the contrary, petechiæ, with dark, offensive and involuntary discharges by urine and stool, fetid sweats, hæmorrhages 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 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 affusion, that is, throwing a quantity of cold water 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 evolution 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 mucilaginous vegetable substances, as arrow-root, &c., rendered palatable by spice or a little wine, or sometimes mixed with milk, may be directed as nourishing and easy of digestion. If, however, there be no marked septic tendency, and the patient 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, and the previous habits of the individual; but it will commonly not be necessary to exceed half a pint, or a pint at most, in the 24 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 agreeable; but where wine cannot be afforded, good malt liquor, or mustard whey, may be substituted. Some moderately stimulant medicines, as ammonia, aromatics, serpentaria, &c., may often be used with advantage, to assist in keeping up the circulation; also those of a tonic quality, as columba, 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 primæ viæ, &c., they quench thirst, remove irritation, and manifestly cool the body; and in the worst forms of typhus, where the putrescent tendency appears, they are particularly valuable from their antiseptic power; they are also decidedly tonic, and, indeed, those 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 and ventilation, and keeping the bowels regular by mild aperients, or clysters of an emollient or antiseptic nature; and where aphthæ 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 antispasmodic medicines may be employed with more advantage, 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 sinapisms, 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 shaved, and kept cool by some evaporating 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 diarrhœa by small

doses of opium, assisted by aromatics, chalk, and other astringents, or sometimes by small doses of ipecacuanha; profuse perspirations by the *infusum rosæ*, a cooling regimen, &c. (For a particular account of yellow fever, see *Yellow Fever.*)

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 præcordia. Towards the seventh or eighth day, the vertigo is increased, and tinnitus aurium, cophosis, 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 appeared in the years 1827 and 1828, in the West Indies, and in the Southern States of North America. It has also been called the *dingee*, 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 rareness 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 heat 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 pains. But many, after leaving their beds, suffered 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. Stedman, 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 to the shoulder. The fingers in both hands, in a few hours, became swelled, 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, filling the sockets, 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 24 to 36 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, continued even weeks, and made 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 gonorrhœa. 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 embrocations, mustard poultices, and the like. The latter were applied to the temples, to relieve the pain in the eye-balls, 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, Daniell, Waring, &c. &c. in the American Journal of Medical Sciences.

Synochus (from συνέχω, 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. Every thing which has a tendency to enervate 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 suppression of some long accustomed 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 vapors arising either directly or originally from the body of a person laboring 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 body, if long confined to one place, 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; marshy or moist 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 over his whole frame; and, this sense of cold continuing 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, 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 generally an increase of symptoms towards 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 abatement of thirst; the skin being covered 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 color, 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 affected, we must act more vigorously, to prevent its disorganization, and the consequent destruction of life. When the character of the disease is changed, the means proper will be such as are pointed out under the head of *Typhus*.

FÉVRE, Tannegui le, or TANAQUILLUS

FABER; a classical scholar of great eminence in the 17th 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 literary acquirements. Cardinal 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 profession. He subsequently removed to Saumur, 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 despised 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 Dacier, and the other was married to Paul Bauldry, professor of ecclesiastical history at Utrecht. His son, after having been a Calvinist minister, returned to the religion of his ancestors.

FEYERABEND; a family of Frankfort on the Maine, celebrated, in the 16th 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 mentions 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 expressæ* (1571, 4to.), in which copper-plate engravings, by this artist, occur. Sigismund Feyerabend published the following collections: 1. *Annales seu Historia Rerum Belgicarum a diversis Auctoribus ad hæc usque nostra Tempora conscriptæ et deductæ* (Frankf., 1560, 2 vols., folio); 2. *Monumenta illustrium Conditione et Doctrina Virorum, Figuris artificiosissimis expressa* (Frankf., 1585, folio). He also published, at his own expense, the *Gynæceum*, 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 the form of essays 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 N. by the straits of Gibraltar and the Mediterranean, E. by Algiers, S. by Morocco, and W. by the Atlantic. It is divided into nine provinces or districts—Shavoya, Temsena, Fez, Beni-hassen, Garb, Shaus, Rif, Tedla and Garet; the whole united to the empire of Morocco. The principal towns are, Fez, the capital, Mequinez, Melilla, Ceuta, Tangier, Larache, Mamora and Sallee. Square miles, about 89,000. The soil is fertile, producing, in the greatest abundance, corn, fruit, flax, salt, gum, wax, &c. Oranges, lemons, figs and olives every where 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 S. 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, 380,000. It was built in 793, by Edris, and soon became a large city, and the capital of the western Mohammedan states. According to Leo Africanus, it contained, in the 12th century, 700 temples

and mosques, of which 50 were magnificent, and adorned with marble pillars. It was esteemed a sacred city, and when the road to Mecca was shut up, in the 4th century 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, physic and astronomy were not only resorted to from 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 13th 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 caravansaries or inns, two or three stories high. The hospitals, once numerous, are, in a great measure, fallen to decay. The shops make a handsome appearance, and the markets 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 splendor and ruin. In 1799, 65,000 of the inhabitants are said to have been carried off by the plague.

Feza. (See *Pasa.*)

Fezzan (anciently, *Phazania*); a country in Africa, situated to the S. of Tripoli, E. of the Great Desert, and 60 days' journey W. of Cairo. Hornemann, 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 E., and other deserts to the S. and W., are reckoned within this territory. The borderers on the N. are Arabs, nominally dependent on Tripoli. Fezzan is bounded E. by the Harutsch and line of deserts, S. and S. E. by the country of the Tibboos, S. W. by that of the nomadic Tuaricks; W. are Arabs. The kingdom contains 101 towns and villages, of which Mourzouk 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, pompions, carrots, cucumbers, onions, garlic, and some wheat. The most common trees are the date, white thorn, and the talhh. 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 soft solid, of a greasy appearance, insoluble in water, which softens in the air, becoming viscid, brown, and semi-transparent. On hot coals it melts, throws out greasy drops, crackles, and evolves the smoke and odor of roasting meat. 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 Thénard, it is composed of carbon 53.36, nitrogen 19.934, oxygen 19.685, and hydrogen 7.021.

Fibrolite; a mineral first found in the Carnatic, where it occurred in fibres, traversed obliquely by cracks, as a component of the granite, which contains the corundum. It has since been found in the U. States, at Bellows Falls, Vt., and Lancaster, Mass., in prisms of considerable size, with rhombic balls, whose angles are about 100° and 80°. It is harder than quartz, of a grayish-white color, 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, John Gottlieb, was born at Rammenau, near Bischoffswerda, in Upper Lusatia, in 1762, and owed his early instruction to the assistance of a Mr. von Miltitz. At a later period, he received a classical education at the famous *Schulpforte*, one of the Saxon royal schools. He then studied at Jena, Leipsic and Wittenberg, 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 professor-

ship of philosophy in Jena, in 1793. In 1800, he was one of the most prominent 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 Grund unseres Glaubens an eine Göttliche Weltregierung* (On the Reasons of our Belief in the divine Government of the Universe), which appeared in his periodical *Philosophisches Journal* (vol. 8, No. 1), he fell under the suspicion of sceptical views. This gave rise to an inquiry, and Fichte resigned his professorship. He accordingly received his dismission, and went to Prussia, where he lived for some time in private at Berlin. In 1805, he was appointed professor of philosophy at Erlangen, with 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 all that 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 work will allow, an intelligible view 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 every thing 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 educated at the public expense. When 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 ardor 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 1819. Fichte's wife was a Swiss. At the time of the battles 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 jail fever, then raging in the city. 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 (*Fichten*, hence its name), and is 33 miles in length and 19 in breadth. The principal of the two ridges, of which this mountain consists, is of granite; but the lateral branches, in particular towards the Regnitz, are of lime-stone. It is rich in iron, vitriol, silver, lead, copper, marble. The principal peaks are the Schneeberg, 3682 feet high; the Ochsenkopf, 3621; 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 of the New Platonists into Latin; he afterwards employed him to aid in establishing a Platonic academy (about 1440). 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 ac æterna Felicitate* (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 labored 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 complete at Basle, 1561, 2 vols. fol.

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 a 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 causes of action existing within its limits; and so 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 (*singulare fideicommissum*), or a part or all of the inheritance (*universale fideicommissum*), immediately, or after a certain time, or on the occurrence of certain circumstances, to another. The heir, who was thus obliged to cede the inheritance to another, was called *fiduciarius*, the receiver *fideicommissarius*. Under Vespasian, 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 Pegasianum; quarta Trebellianica*). The modern *fideicommissa* are very different. They are establishments, by which an amount of property is made unalienable, and the order of inheritance prescribed. In most 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 successiva*) the *quarta Trebellianica*, of course, is not deducted.

FIELD MOUSE. (See *Mouse*.)

FIELDING, Henry, a writer eminently distinguished for humor and knowledge of the world, was born at Sharpham park, in Somersetshire, April 22, 1707. He was educated at Eton, whence he removed to Leyden; but the straitened circumstances of his father shortened his academical 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 favorable reception, as did likewise his 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 humor, he took too little time to construct his dramas, with a view to plot and effective developement. Many of his plays are little 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 es-

tate 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, dedicated himself to the bar as a profession, 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 Cervantic style of humor 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 at the bar; nor was the emolument attached to 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 affliction was greatly increased by the death of his wife. In 1745, he published a periodical paper, entitled The True Patriot, which was followed by The Jacobite Journal. These labors 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 attention to the prevention 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. It was 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 humor 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, humor, correct delineation of character, and knowledge of the human heart. He is too fond of the manners and scenery of vulgar life, and too prone to excuse gross deviations from propriety and good conduct, under the vague qualification of "goodness of heart." Perhaps, however, no novel exceeds Tom Jones in the exhibition of character and manners, in the developement of the story, and the management of the catastrophe. Amelia, with less variety and invention, is, in regard to portraiture and knowledge of life, almost equally felicitous; while, as to pure raciness of humor, 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.

Fielding, Sarah; third sister of Henry Fielding. She was born in 1714, lived unmarried, and died at Bath, where she long resided, in April, 1768. She was the author 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 favored with some valuable notes by Mr. Harris of Salisbury); The Countess of Delwyn; The History of Ophelia; The Lives of Cleopatra and Octavia; and one or two more of a minor class.

Field Pieces; small cannons, from 3 to 12 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 ears 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 camps, highways, &c.

Fieri facias, 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 chattels of one party, for the benefit of another. (See *Execution.*)

Fiery Cross. (See *Crantara.*)

Fiesco, Giovanni Luigi de' Fieschi, count of Lavagna, a distinguished victim of unsuccessful ambition in the 16th century, was the head of one of the noblest houses in Genoa. He became master of a large patrimony at the age of 18, and, being surrounded with dependents and flatterers, and really possessing considerable 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 Andrew Doria. The latter, whose patriotism and great qualities had justly raised

him to the distinction of first citizen, being too intent upon the elevation of his nephew Giannetino, a youth of a 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 Genoa from the interest of the emperor, was easily induced to favor this enterprise, to which the concurrence of pope Paul III, who furnished some galleys, was also afforded. Although Andrew Doria received some intimation of the design in agitation, Fiesco conducted himself with so much circumspection and apparent 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 Jan. 1, 1547, Fiesco, who had prepared a galley under pretence of a cruise against the corsairs, waited upon Andrew Doria, to request permission to depart from the harbor 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 500 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 these, from which he was proceeding across a plank to the captain galley, when the board gave way, and, falling into the water, encumbered with his armor, he sunk to rise no more. Thus terminated the life of this young and able votary of ambition, at the early age of 22. His confederates failed in their attempt on Andrew Doria, but Giannetino 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 Santi 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 beato* (the blessed), on account of his pious life and his sacred pictures, 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 St. Mark, and the church of St. Annunziata. 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. Laurence, 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 Nicolo V*, &c. (Paintings in the Chapel of Nicholas V, &c.), by Francis Giangiacomo Romano. Vasari relates the most striking anecdotes of the piety, 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 pious fasts and unceasing labor 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 consent of his superiors, to whom 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

brother Antonino, 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 68, at Rome, where he had painted the chapel of the Holy Sacrament in the Vatican, and was buried in the church Della 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.

Fiévée, J.; an acute and ingenious French author, especially on political subjects. He was born at Paris, 1770, and was, at first, a printer. At the breaking out of the revolution, he adopted the new principles of freedom, and engaged in writing for the journals. He thus became acquainted with Millin and Condorcet, with whom he was associated, in 1791 and 1792, in editing the *Chronique de Paris* (Paris Chronicle). The reign of terror produced a change in his principles, and after the 9th Thermidor, he became one of the most violent opponents of the convention, in the sections and public journals. On the 18th Fructidor, he was sentenced, with all the other editors of the (so called) *royalist journals*, to deportation to Cayenne. He escaped the consequences of the sentence by flight, and concealed himself for some time in the country, where he wrote two romances—*La Dot de Suzette* and *Frédéric*—which had a temporary success. He maintained a secret correspondence with the Bourbons, and exerted himself in their service. He was detected and punished by a year's imprisonment in the Temple. On the establishment of the consular government, he became connected with it. In 1802, after a journey to England, he published *Lettres sur l'Angleterre* (Letters on England), which excited much attention. In 1805, he stood so high in the favor of Napoleon, that he became proprietor of the *Journal de l'Empire*, or *Journal des Débats*, and imperial censor. In 1810, he was sent on a secret embassy to Hamburg, and, on his return, received the office of prefect. It was easy for him to slide into the principles of the restoration. He published a history of the remarkable session of the chambers in 1815, and his *Correspondence politique et administrative*, an interesting work, dedicated to count Blacas. As an author, he has recently adopted the principles of the left centre in the chamber of deputies, as appears from his work, entitled *De la Guerre d'Espagne et des Conséquences d'une Intervention armée* (April, 1823; 4th edition, Paris, 1824), in which he declared himself decidedly opposed to an armed interference in the Spanish affairs. All parties in France agree that Fiévée is one of the most clear and profound French publicists, and belongs, exclusively, to no party.

Fife; a wind instrument of the martial kind, consisting of a short, narrow tube, with holes disposed along the side, for the regulation of its tones.

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 south of Europe, and 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 15 to 25 feet high, with a trunk sometimes two feet in diameter, giving out a great number of long, twisted, pliant 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 fleshy and connivent 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 color, 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 upon the wild fig-tree; 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 fertilizing the female flowers in the garden. And from these wild flowers, the fertilizing 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 flavor. Dried figs are easier of digestion and more 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 very excellent. In the U. States, the fig is sparingly cultivated in the environs of Philadelphia, but does not succeed so well as farther south. 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 bearing, and the fruit is not always of as good 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 *caoutchouc*, or gum elastic, has not been long known, and is a native of the mountains of Nepaul. This latter tree would probably succeed in the U. States, and make a valuable acquisition.

Figural or Figurate Numbers; an arithmetical amusement, much in vogue at the beginning of the 17th century. Jac. Bernouilli, and particularly Wallis, in his *Arith. infinit.*, and L'Huilier, 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,	6,	10,	15,	21, &c.
III.—	1,	4,	9,	16,	25,	36, &c.
IV.—	1,	5,	12,	22,	35,	51, &c.

Those in the 2d row are called *triangular* numbers, because their units may be arranged in pure equilateral triangles; the members of the 3d row are called *square* numbers; those of the 4th, *pentagonal*, &c.; and so there are also *hexagonal*, *heptagonal*, and, in general, *polygonal* numbers. 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 plac-

ing 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, 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 back ground during the exhibition of individual performers. They correspond to the *chorus* 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 18th century, who contributed much to the progress of legislation, was born at Naples, Aug. 18, 1752. He was a son of Cæsar, prince of Araniello, 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 14th year, but which he soon after left, and devoted himself to study with such ardor, that, notwithstanding the neglect of his early education, at the age of 20, 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 mathematics. 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 soon made him distinguished. In a work against the favorers 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 stations of honor at the court, which did not, however, divert him from his favorite 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, which formed a new epoch in criminal legislation, Filangieri intended to examine all 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 2 vols. This work met with prodigious success, not only in Italy, but all over Europe; and the author, at the age of 28, 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 abuses or defects with the same freedom and boldness. His exposure of the evils of 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 5th, 6th and 7th 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 governess 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 36. He had previously completed the 8th 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. From the papers of Filangieri, it appeared that

he had intended to prepare a *Nuova Scienza della Scienze*, 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 his mental developement. 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 17th 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 verses 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 was chosen member of the academy della Crusca, and, soon after, he 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 Vienna 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 established as 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. Filicaia 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 favorite 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 *Poesie Toscane di Vincenzo da Filicaia*, and dedicated it to Cosmo III. Another edition, with the life of the poet, by Tommaso Bonaventuri, appeared in 1720, and a third, in 2 vols. (Venice, 1762), which the later editions have followed. Filicaia was particularly successful in the canzoni, and in some of his sonnets;—that, for instance, which begins,

Italia, Italia, o tu cui feo 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 through 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 fillagree 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, which is strewed over the plate; and after being put into the fire a short time, the whole becomes united. When the fillagree is finished, it is cleansed with a solution of salt and alum in water. The Chinese make most of their fillagree 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 woollen 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 filtering substances; but as the impurities 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 *pinnæ*, and consist of bony, cartilaginous or membranaceous rays, supported and held together by an interradial membrane, mostly of a very delicate 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 sometimes are added several finlets or *pinnulæ*—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 tail. 3. The *ventrals*, or abdominal fins, are placed under the throat or belly, and point backwards. They are smaller, in general, than the pectorals, and have sometimes long appendages, as in the *osphronemus*, or *goramy*. In the gurnard, pectoral appendages also occur. 4. The *anal* fins are situated under the tail, varying in number from one to three, placed vertically, and, like the dorsal, generally deeper on the anterior margin. Lastly, 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 availed themselves of 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 fishes are taken by the hook. Sometimes spines occur separate and unconnected with the fin, as in the *gasterosteus*, 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 much ground. In the case of the sting-ray 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 developement of the dorsal occurs in the *chætodons*, and a peculiar species of sword-fish, while in the *exocetus*, 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 *cyclopterus*, 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 color and size, the fins of fish present the greatest variety, affording excellent

characters for distinguishing the species. (For the arrangement depending on their number and position, see *Fish.*)

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 character 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 Linnæus, which has since been much subdivided by modern ornithologists. Among the most celebrated is the goldfinch (*F. carduelis*). This is the most esteemed of the hard-billed birds for the colors 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, with a ring of rich scarlet 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 its warbling about the beginning of March, and continues melodious throughout the whole spring. In winter, it assembles 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 swallow down. The female goldfinch will sometimes pair with the canary. The females lay five white eggs, marked with spots of a deep purple color 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 very docile, 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 14th century. Belon, who wrote in the 16th, makes no mention of them. 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 20 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 and 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 variously improved by education; for this bird, being more easily reared than most others, and continuing its song much longer, has had much attention paid to it. Numbers of treatises have been written on the rearing and education of these birds, which we have not space to analyze. Let it suffice, that in Germany and the Tyrol, 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 strewed 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 Tyrolese usually take over to England about sixteen hundred of these birds; and, though they carry them on their backs, nearly 1000 miles, and pay 20 pounds for them originally, they can sell them at five shillings each.—Linnet (*F. linaria*). 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 color on the upper parts, and a dirty reddish-white beneath. It builds

its nest in low bushes: the outside is made up of dried grass, roots and moss, lined with hair and wool. The female lays four or five eggs, of a pale blue color, 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 confined with them, and, in some instances, has been taught to pronounce 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. The linnet also inhabits the northern parts of America, visiting the Middle States in the winter. It is rare in Pennsylvania, but in some years appears in large flocks.—We have a great number of the finch tribe, natives of the U. States, which have been arranged, by the prince of Musignano, under four subgenera, *spiza*, *carduelis*, *fringilla* and *coccothraustes*, including 29 species, among which the *F. cyanea*, or indigo-bird, *F. melodia*, or song-sparrow, *F. hyemalis*, or snow-bird (q. v.), and *F. tristis*, or yellow-bird (q. v.), are best known. The latter subgenus includes the grossbeaks. (q. v.)

Finch, Heneage, first earl of Nottingham, was the son of Heneage Finch, recorder of the city of London, a descendant of the Winchelsea family. He was born in 1621, and was educated at Westminster school, and Christ Church, Oxford, whence he removed to the Inner Temple. At the restoration 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 chancellorship, 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.)

Fingal (Fin Mac Coul, or Fionghal), 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 neighborhood 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 Caracul, mentioned by Ossian, is Caracalla, is, notwithstanding the authority of Gibbon, Whitaker and Macpherson, very improbable. He frequently made expeditions to Sweden, the Orkney islands and Ireland. Ossian calls these places *Lochlin*, *Innislore* and *Ullin*. These expeditions 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. Ossian sings his death, without giving 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 bases 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 cov-

ering 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 fingering 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 unlearn 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, *Maso*); a celebrated sculptor and goldsmith, to whom is ascribed the invention of copper-plate printing. He lived at Florence, about the middle of the 15th 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 baptistry 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 enchasing dark metallic substances, called in Latin *nigellum*, into cavities worked on gold or silver, and fixing them by fusion. Many have regarded the German painter Martin Schön as the inventor of copperplate printing; but this painter made no impressions till after 1460. Peace, executed in *niello*, by Finiguerra, in 1452, and the Crowning 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 bass-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.

FINISTÈRE, 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° 56′ 38″ 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 17 leagues out at sea. The Romans called it *Finis Terræ*; also *Artabrum*, from the Artabri, the tribe which they found there.

FINLAND; a Russian grand-principality, containing 135,600 square miles, and 1,378,500 inhabitants, and divided into 12 circles. It consists of three parts; 1. that part of Finland ceded by Sweden to Russia by the peace of Abo (q. v.), 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 Aug. 6, 1809. The administration is entirely different from that of the other Russian provinces. A governor-general, with 14 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, Oct. 1, 1819. It has 8000 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 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 mostly 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 interesting inquiry. Tacitus was acquainted with a race called *Fenni*, whose favorite residence was the woods and morasses of the north. They called themselves the *inhabitants of the morasses* (in their language *Suamolainen*), 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 Norwegians first subdued Finmark. Their expeditions against the Permians, a tribe of Finns on the White sea, continued till the princes of Novgorod had made themselves masters of Permia 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 Permia fell under their power, and, in the 14th 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 Iomala 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 12th century, St. Eric converted the inhabitants of the present Finland, and, a century later, the Swedes subdued Tavastland, and also the parts of Karelia and Lapland not belonging to Russia. The subjugation of the Finnish tribes in the north was now complete; 12 tribes, wholly or in part, became subjects of Russia,—the Laplanders, Finns, Esthonians, Livonians, Tscheremisses, Tschuvasches, Mordvines, Votiacks, Pirmiacks, Siryanes, Vogules, and Ostiacks of the Obi. To these may be added the Tepteri, consisting of several Finnish tribes, principally the Tscheremisses, Tschuvasches and Mordvines, and some Tartars. The Finns are of a small size, but robust. They are characterized by a flat countenance, with 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 Mordvines are more like the Russians, and the Vogules like the Calmucks. The Finns are principally Christians, and profess either Lutheranism or the religion of the Greek church. But among the Tscheremisses, Mordvines, Votiacks and Vogules there are some heathens who profess Shamanism. 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. Filthiness and indolence are characteristics of a large number of the Finnish tribe. The Finns, in a narrower sense, are a grave, laborious, industrious people, inured 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 Strahlmann.

Fioravanti, Valentine; a composer of Florence, especially distinguished by his comic operas, which are remarkable for native wit, for lightness, vivacity and

spirit. Since July, 1816, he has been the chapel master of St. Peter's in Rome. He studied at Naples, but entered on his theatrical career at Turin. In 1797, he wrote, for the royal theatre at Turin, *Il Furbo contro il Furbo*, and soon after, *Il Fabro Parigino*. He afterwards wrote several operas for different Italian theatres. In 1807, he went to Paris, where he produced *I virtuosi ambulanti*, the words of which Picard has imitated in his *Comédiens ambulans*. They had the same success as his *Capricciosa pentita*, which had appeared in Paris in 1805. He has also obtained great favor in Germany by his comic opera, *Le Cantatrici villane*—a piece full of spirit, lively wit, and beautiful melody, and which may be considered as classic among comic operas. He has also written a number of beautiful songs, with the music for the piano-forte, some of which have been printed in London.

Fiord, the end of several Danish and Swedish geographical names, means an *arm of the sea*, a *narrow strait*, a *frith*.

Fir-Tree. (See *Pine*.)

Fire. The all-consuming 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 colors 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 in the composition of all bodies, and to require only the concurrence of favorable circumstances to develope 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 amplectitur omnem,
Cuncta parit, renovat, dividit, unit et alit.

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 recognise 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 treated in the schools, theories were adopted to which little attention is paid in the present age, when all science is founded on facts 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 are kindled by the approach of flame, and produce terrible explosions, which may be prevented by currents of air, or more completely by sir Humphrey 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 carbonated hydrogen gas, which, when mixed with a certain proportion of atmospheric air, and brought into contact with burning bodies, explodes.

The warm springs, the existence of extinct volcanoes, the effects of those still in activity, and the fact that the temperature of the earth becomes warmer the deeper we descend, have induced many philosophers to adopt the idea of subterranean fires, or of a central fire. According to the former hypothesis, there are combustible materials, in a state of ignition, in the bowels of the earth, which produce the heat indispensable for the production of the above-mentioned phenomena. The latter hypothesis supposes that the globe was once in a state of igneous fusion, that the surface has gradually become solid by cooling, and that the interior of the earth is still liquid and hot, and may remain so forever, if the heat received from the sun

is equal to that which it lost by radiation.

Among the meteors accompanied by luminous appearances are *St. Elmo's fire*, (called also *Elias's fire*, *Helen fire*), and the *bolides* or *fire-balls*. The former consists of little flames, which are seen in storms on the ends of masts, and all pointed and angular bodies: these are well known to be entirely electrical; but sailors, at least those of the south of Europe, consider two flames, which they call *Castor and Pollux*, a good omen, and a single one a bad omen. The bolides are globes of fire moving with extreme rapidity and great brilliancy through the air; they are sometimes attended by a rumbling noise, like that of a loaded wagon; this is often followed by a violent explosion, accompanied with a fall of stones, more or less abundant, the origin of which is as yet dubious.

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 classes them with aerolites or meteoric stones. (q. v.)—2. In gunnery, every ball which is capable of being ignited and burned. In military operations, such 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 armor of metallic gauze, which fabric was discovered by Sir Humphrey Davy to be impervious 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 preëminently 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 *Pump*.) But, in order to remedy the intermission of the jets which would result from the simple forcing pump, and to 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, it reacts on the water with a power proportioned to the condensation. Thus, if the air is condensed one third, its elasticity will be three times greater than that of the atmosphere, and it will raise water in a tube to the height of 66 feet. 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 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 Newsham'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. In some engines, a single cylinder is used, the piston rod passing through a tight collar, and alternately receiving and expelling the water at each end 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. The *hose*, a long flexible tube made of leather, is of great use in carrying the spouting orifice near to the flames, and thus preventing the water from being scattered too soon. It also serves an important purpose in bringing water from distant reservoirs, by suction created in the pumps of the engine.

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 7 inches diameter, being the steam cylinder, and the other of 6½ inches diameter, being the water pump. By the horizontal position of the two cylinders the parallel motion is easily produced. The boiler is on the construction and principle of Braithwaite and Ericson's patent steam generator. This engine will deliver about 9000 gallons an hour to an elevation of 90 feet, through an adjutage of ⅞ inch. The time of getting the machine into action, from the moment of igniting the fuel (the water being cold), is 18 minutes. As soon as an alarm is given, the fire is kindled, and the bellows, attached to the engine, are worked by hand. By the time 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. By the time of arriving at the fire, preparing the hoses, &c., the steam is ready. The expense of fuel is stated to be at London six pence 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 the United States, 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 produced 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 provision of 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 7th century. When the Arabs besieged Constantinople in 668, the Greek architect Callinicus of Heliopolis 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 stone balls from iron or metallic tubes against the enemy. The use of this fire continued at least until the end of the 13th century: but no contemporary writer has handed down to us any accurate account of its composition. To judge from its effects, neither naphtha, sulphur nor rosin were principal ingredients; but saltpetre probably was. It does not appear, from the accounts of the ancients, 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 in a Latin MS. of the 13th 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 *Ordeal*.)

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 chimney, and, consequently, into the room; and almost all the radiated and conducted heat was carried off. The application of modern practical science to the comfort of common life has been of the greatest benefit in this respect. Wood has hitherto been the principal fuel in the U. States; but coal is constantly becoming more commonly used for this purpose. The arrangement need not be essentially different, whichever kind of fuel is employed. 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 will radiate more heat 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, and, when executed 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 circuitous 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* is a common fire-place, constructed with a 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 soapstone 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 stone, and a great quantity of air 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 enemies' ships, and set them on fire. The following is a description of the fire-ships which were of such essential service to the Greeks in their late struggle with 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; nothing more being wanted than 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 small barrel of gunpowder; so that, 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 barrel, 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 sails; and at the extremity of each yard-arm is attached a wickered hook, which, being once entangled with the enemy's rigging, renders escape, after coming in contact, almost a matter of impossibility. The train, to prevent accidents, is never laid till the moment of using it; when, all being placed in order, and the wind favorable, with every possible sail set, so as to increase the flames, she bears down upon the enemy's line, whilst the crew, usually 25 or 30 in number, have no other defence than crouching 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 stem to stern; and, ascending by the tarred 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 to attempt to save the devoted ship. Sometimes, 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 piasters."

Fire-Weed. The *senecio hieracifolius*, an American plant, belonging to the natural order *compositæ*, has received this ap-

pellation in the U. States, from its appearing abundantly wherever lands have been burnt over. The root is annual; the stem upright, about three feet high; the leaves large, clasping the stem, unequally and deeply toothed; the flowers in a sort of terminal corymb, erect, with a very short ray, and the calyx cylindrical. The whole plant possesses a strong and disagreeable odor.

Fire-Works. (See *Pyrotechny.*)

Fire Worship; a species of ancient fetich worship (see *Fetich*), or of pure adoration of nature, 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 *primum mobile*, from east to west, about the poles of the ecliptic; and another opposite motion, from west to east, which last it finishes, according to Tycho, in 25,412 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 commonly called the *Platonic year*, or the *great year*.

Firman; 1. among the Turks, an order which the grand vizier issues in the name of the sultan; 2. in the East Indies, a written permission to trade. (See *Turkey.*)

First Fruits and Tenths, 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 all Christendom, but, in England, by stat. 26 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, benefices under £50 per annum shall be discharged of the payment of first fruits and tenths. 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 £23 per annum, its operation will be very slow.

Fisc. *Fiscus* signified, in the Roman law, the private treasury of the emperor, as distinguished from the public treasury (the *ærarium publicum*). In modern law, on the European continent, *fiscus* denotes the public treasury, and the private treasure of the monarch is called *chatoulle*. *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 its particular privileges. These privileges were very extensive by the civil law; as, for instance, the lien which the *fiscus* had on the property of its officers, and of those who had made any contract with it; the right to demand interest, even if it was not a part of the contract, and that of not being obliged to allow interest in case of delay of payment: a greater length of time was required to bar actions on the part of the *fiscus* than on that of private persons; it was not obliged to give surety nor to pay the costs of processes: there were many other privileges, in part necessary and in part arbitrary and tyrannical. 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 *ministère public*, and the solicitor and attorney-general in England. In the ancient German empire, there were imperial fiscals, whose duty it was to prosecute violations of the laws of the empire; for instance, abuses of the right of coining, 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 his name of *Mentzer*; according to others, at Strasburg. He became doctor of laws, and, about 1586, was bailiff of Forbach, near Saarbrück. 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 have the most whimsical titles. As a satirist, he is the most unrestrained of his age, inexhaustible in droll, humorous and witty thoughts, not seldom

guilty of equivoque and obscenity, 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 works are a *rifaccimiento* of the *Gargantua* of Rabelais, first printed in 1552; *Das glückhaft Schiff von Zürich* (The lucky Ship of Zürich), 1576, 4to., and several others. We also find in Fischart the first attempt at German hexameters, which have been lately brought to perfection by Aug. W. von Schlegel. 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.

Fischer, Gotthelf, a distinguished philosopher, vice-president of the medico-surgical academy, professor in the university at Moscow, and Russian counsellor of state, was born Oct. 15, 1771, at Waldheim, in Saxony. He was a fellow-student of A. von Humboldt, at the mining academy in Freiburg, and first made himself known by a work—*Versuch über, die Schwimmblase der Fische* (Inquiry concerning the Airbladder of Fishes), Leips., 1795. At Paris, he studied comparative anatomy, under Cuvier, and wrote on several subjects in this department of science. In 1800, he was appointed librarian at Mayence, and soon displayed the results of his bibliographical labors. He discovered a printed work older than any then known with the date of the year, described a number of old works, and endeavored to settle the claims of Guttenberg in his *Essai sur les Monumens typographiques de Jean Guttenberg* (Mayence, 1804), *Notice du premier Monument typographique en Caractères mobiles avec date* (Mayence, 1804), and in several German publications. Fischer was one of the deputation sent to petition the emperor Napoleon to create Mayence a staple; and, on this occasion, he received permission to select a library for Mayence from the books belonging to the government. Several works on comparative anatomy obtained for him the places of professor and director of the museum of natural history in Moscow. In 1805, he published his *Description du Muséum d'Histoire naturelle* (Moscow, 1805). The same year, he founded the society of naturalists at Moscow, which afterwards received the title and privileges of an imperial society. The science of fossil remains is much indebted to him. His *Tabulæ synopticæ Zoognosiæ* passed through a third edition in 1813. In 1811, he published *Onomasticon du Système d'Oryctognosie.* On the burning of Moscow, the splendid museum and his private collections, preparations, and a rich craniological cabinet, were destroyed. Immediately after the peace, he began a museum, which already ranks as one of the richest collections. In 1817, he was appointed vice-president of the imperial medico-surgical academy, to which he rendered essential service by establishing a clinical department, and introducing other improvements. His latest work is his description of the insects of Russia—*Entomographie de la Russie et Genres des Insectes*, 2 vols.

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 1495, 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 DD., and the next year he became the first Margaret professor of divinity at Cambridge. In 1504, he was unexpectedly promoted to the see 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 richer. 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 favor 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 induced Fisher 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 punishing his opposition 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 Arragon, 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 a cardinal. The king, on 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 against him existed, sufficiently strong to affect 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, 1535, was beheaded on Tower-Hill. Bishop Fisher was a zealous 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 fisheries, are the whale (see *Whale-Fishery*), cod, herring, sturgeon, mackerel. These animals are described under their respective heads. We shall here only give some account of the manner in which they are taken. There are two favorite places of resort for the cod; one in Europe, off Dogger's Bank, Well-Bank and Grommer; the other, and most extensive and important, on the coasts 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, American, French, English, Dutch and Spanish, is calculated to amount to 6000 or 7000, which take about 40,000,000 fish annually. The American fishermen, principally from New England, are engaged both in the Bank fisheries and the Coast fisheries. A late English traveller in Nova Scotia (1830) was surprised to find the bays swarming, as he expresses it, with Marblehead boats, before the Nova Scotians had moved in the business. The vessels which are intended for the Bank fishery, measure from 70 to 90 tons, and carry from 8 to 10 men. They are engaged in fishing from March to October, making two or three fares, and bringing home the fish to be cured. On taking them, they merely cut off the head, open them, sprinkle them with salt, and throw them into the hold. Some of these are injured before they get home, and these form an inferior quality, under the name of *Jamaica fish*. Those vessels which are intended for the Labrador or Coast fishery, are from 40 to 120 tons, with about the same proportion of men as the *Bankers*. They set out in May, arrive on the ground in June, and select a place for fishing somewhere on the coast of the bay of Chaleurs, 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 convert them into 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 as a bait; they are sometimes, however, taken in nets, though more rarely. 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 broken

by the guards. As soon as the hetman 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 *Uralian army* (as it is called) travel, at full gallop, to St. Petersburg, to deposit the spoil. 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 wears, made for the purpose, which, in certain places, have grates so disposed, in an angle, that, on being impelled by a 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 a spear. They may be caught by means of a light, which attracts them to the surface, when they may be speared or scooped in.—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. 100,000 persons are said to be engaged in this fishery. The presence of the herring is easily discovered, by the great flights of birds which accompany them during the day, by the unctuous 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 enormous extent. The Dutch have them of 600 fathoms in length, made of silk cord. These nets are dragged by a capstan. Herring are very plenty 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. (For an account of the anchovy fishery, see *Anchovy*.)

Fisherman's Ring (*annulus piscatoris*). 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 *dignum*, and the leaden seal hangs from a hempen cord; in acts of grace, it hangs by a red and yellow cord of silk. Briefs are issued on less important occasions, and by the apostolic secretaries. These are written on fine white parchment, with Latin 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 confidants, 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.

Fishes; animals which live in the water, with red, cold blood, with cartilages or bones, with fins instead of limbs, and which inspire and expire air, in combination with water, by means of gills, instead of lungs. They can live but a short time out of the water, although eels have been seen on land in fields of peas. At Tranquebar, there are perch which, by means of the sharp points on their fins, climb up the palm trees. (See the article *Fin*.) According as fishes have cartilages, or a bony structure, they are divided into two general classes. The cartilaginous fishes either have or have not a gill-cover. To the latter kind belong the lamprey, the ray and the shark; to the former, the sturgeon, the porcupine-fish, the sea-needle, the eel and the sword-fish. The bony fishes are divided into orders, according to the position of the ventral and thoracic or pectoral fins. In the eel-pout, the Baltic dorse and the haddock, the ventral fins are placed before the pectoral; they are directly under them in the bream, the perch, the perch-pike, the mackerel, and the river-perch, and behind them in the salmon, the pike, the herring, and the carp. In the structure of fishes, the fins are remarkable as being the only organs of motion. (See *Fins*.) They consist of bony rays, covered with the epidermis, and attached to certain cartilages or bones which are mov-

ed by particular muscles. The tail, with its fin, serves as a rudder, to give the proper direction to the motions of the animal. The first impulse in swimming evidently comes from the tail; the other fins serve to regulate the position of the fish, and to guide him in his different motions. The eel, which has no ventral fins, swims like water-snakes, by moving his whole body in an undulating manner. The muscles of fishes must be distinguished from the fleshy muscles of warm-blooded animals. They consist of white or light colored layers, with fibres of a thicker texture than those of warm-blooded animals; between these layers there is a white, gelatinous substance, which grows putrid very soon after death. If we look at the organs of sense and the nervous system in fishes, we cannot but remark the extraordinary smallness of the brain in proportion to the size of the body; in man, the brain is 1-23 of the body; in the shark, it is 1-2500, and in the tunny-fish, 1-37,400; it is also less solid than in warm-blooded animals, and consists mostly of lumps resembling ganglions. The cerebellum is only a transverse plate, entirely without the structure, which, in higher orders of animals, is called *arbor vitæ*. The nerves of fishes are weaker than those of the higher animals: some of them, however, are such powerful exciters of electricity, that they can give violent shocks; but the power ceases as soon as the nerves are cut. The torpedo, the gymnotus, the electric eel, the Indian-needle, and the electric porcupine-fish, are five fishes which appear to be living Voltaic piles; for they have two muscular piles, separated from each other by a membrane resembling a net, and which, at least in the torpedo, lie under the curved cartilages of the large side fins, and are regulated by particular nerves. As to the organs of sense in fishes, those of smelling and seeing appear to be the most perfect. Fishes smell the bait farther than they can see it, and the shark perceives at an incredible distance the odor of a Negro. Their organs of smell have no connexion with those of respiration; and the water apparently conveys the effluvia affecting the sense of smell much less perfectly than the air; but they have very large olfactory nerves, the ends of which were for a long while taken for the true brain. As to their organs of sight, they have very large eyes, but generally no eyelids; but the epidermis goes directly over the eye, and in the blind-fish appears to have only a slight transparency. The cornea is very flat; immediately behind it usually is the crystalline, which can protrude even through the pupil, so that there is very little room for the aqueous humor. The crystalline of fishes, on the other hand, is nearly spherical, and also of a greater density than that of land animals; it is apparently moved by an organ in the shape of a fan, which proceeds from a knot of several optic nerves. The iris is generally of extraordinary brilliancy, and of a beautiful red or gold color; the vitreous humor is very small. The organs of hearing are less perfect, although this sense cannot be entirely denied to fishes. Only cartilaginous fishes have an external auditory passage, as the shark and the ray; the fishes with bones are without this external ear. All of them have three winding tubes in their head, which terminate in a bag filled with nervous marrow, and containing three hard bones. This constitutes the whole organ of hearing. That of taste seems to be still more imperfect. Their tongue has not even the *papillæ*, and the nerves are branches of those which go to the gills. The respiration of fishes is carried on by means of their gills; these are well known to be vascular membranes, four on each side, fastened to a curved and flexible cartilage. They are connected with the cartilages of the tongue, and with the cranium. In cartilaginous fishes, the gills are within the body like bags, and a determinate number of external openings lead to them; the lampreys, and that kind called the *nine eyes*, have seven, rays and sharks five of these openings. Several fishes have also a peculiar covering for the gills, and frequently a membrane over them, which can be contracted or extended. It encloses a number of winding cartilages, which are called its *rays*. The gills, as is very evident, can only receive the air which is mixed with the water. What is called the *air-bladder* is, in most fishes, joined by an air-pipe to the stomach or throat. This is thought to contain nitrogen; but it is certain that it assists their rising in the water. Several fishes, as the loach and gudgeon, breathe also through the excretory duct, as is fully proved. The ling are even discovered when at the bottom of the sea, by the rising of air bubbles. Fishes commonly have no voice; but the father-lasher, the loach, the trout, and some others, give, when pressed, a murmuring sound, in doing which they seem to make great efforts, and tremble all over their body. It is very probable that this sound is produced by the air, violently pressed out of the bladder. The circulation of the blood in fishes is, as might be expected,

different from that of the higher classes of animals. The heart consists only of one auricle and one ventricle; it receives the blood from the body, and sends it, by a single artery, directly to the gills; it is here provided with oxygen by contact with water, and the air contained in it, and is again received by a number of small vessels, which flow together into the aorta, which distributes the blood over the whole body. The motion of the heart is, in fishes, much more independent of the brain and spinal marrow than in the higher orders, and, for this reason, can continue several hours after the brain and spinal marrow have been destroyed. The chyle produced by the digestion of fishes is received by absorbing vessels, which terminate immediately in the veins, without going through glands. Although most fishes lay eggs, which are matured and hatched out of their body, there are cartilaginous fishes which are viviparous. That there are hermaphrodites among fishes has been lately proved; for Home has found in lampreys both spawn and milt. The productive power of fishes is greater than that of any higher animal. In the spawn of the tench there have been counted 38,000 eggs at once; in that of the mackerel, 546,000; and in that of the cod, 1,357,000. —The twelfth sign of the Zodiac is called "the Fishes." (*See Ichthyology.*)

Fitz (the old 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 also add the essential distinction, that *Fitz* always denotes illegitimate descent. Thus there are Fitz-Clarences, sons of the late duke of Clarence, now 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-Flaum*); a seaport at the bottom of the gulf of Quarnaro, on the Adriatic, and capital of the Hungarian *Litorale*, which belongs to the kingdom of Croatia. Fiume contains 743 houses, and 7600 inhabitants. It is the seat of government of the Litorale, of a commercial tribunal, a health office, 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 15 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 unctuosity 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 and fruits of vegetables, and varies 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 less pure. The purest 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 color, 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 neighborhood of this temperature, however, they begin to boil, and to disengage an inflammable vapor; but the oil thus condensed is altered in its properties; it loses its mildness, becomes 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 rancidity 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 unctuous to the touch, nor give a stain to paper. This property, for which linseed oil is remarkable, may be communicated quickly, by heating the oil in an open vessel. The drying oils are employed for making oil-paint, 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 particularly in the Russian arsenals, 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 24 or even 12 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 is employed as oil varnish. 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 oxidated 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 color 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 color, a very fetid 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 Thenard, 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 position. 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 equinoxes (see *Precession of the Equinoxes*) and the aberration of light (see *Aberration*), a very slow, proper motion has been observed in them, so that it is not strictly true that the fixed stars remain in the same relative position. It has been found that Sirius, for example, has, 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 results from a 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 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 innumerable 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. Much general information is to be found in Bode's Introduction to a Knowledge of the Starry Heavens (19th edition, Berlin, 1823). In order to distinguish more easily the fixed stars from each other, names were given to the most remarkable of them in very ancient times, and they 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 Descriptio, xx. Tabulis æneis incisa, ex recentissimis et absolutissimis 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 (present price of the maps and text, 4 *Friedrichs-d'or*). Bode's Introduction gives us a complete list of the ancient catalogues of stars, of celestial globes, &c.

Fixmillner, Placidus, a Benedictine monk and astronomer in the monastery of Kremsmünster, in Upper Austria, was born May 28, 1721, and died August 27, 1791. He was 40 years professor of the canon law at a school for young noblemen at Kremsmünster; but he owes his reputation to his astronomical writings and observations. His uncle, the abbot of the monastery, established a mathematical hall, 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. Under his direction, the artisan made the quadrants, zenith-sectors transit instruments and clocks; and the observatory of Kremsmünster became one of the most distinguished in Germany. Its history, by Fixmillner, is given in the *Decennium Astronomicum, ab An.* 1765 *ad An.* 1775; and *Acta Astr. Cremissamensia ab An.* 1776 *ad An.* 1791. Fixmillner published also some of his observations in the scientific journals of Germany. By his numerous observations of Mercury (then very difficult to make), Lalande was enabled to compile his accurate tables of that planet. Fixmillner was one of the first observers and calculators of the orbit of Uranus, or Herschel, of which he constructed tables. He was the first who scientifically examined and proved the truth of Bode's supposition, that the star 34 of Taurus, observed by Flamsteed in 1690, and afterwards lost, was the same as this planet. He made all his calculations himself, and always twice over. As a man, he was mild and amiable.

Fixtures, in law, are things attached to land, and that pass with it to the heir, and not, as personal property, to the executor; such as lime-kilns, millstones, structures for fish-ponds, pumps, chimney-pieces, stoves, funnels, fixed tables, benches, wainscoting, &c. The question as to what are, and what are not fixtures, is of some importance, not only between the heir and executor, but between the landlord and tenant; and, because too rigid a rule would discourage improvements by tenants, if they were obliged to leave the structures, on which they might have bestowed great expense, on the premises at the expiration of their leases, the law is very liberal in allowing them to remove such articles as they have put up during the term of the lease, for carrying on their trade or business, though the articles, when in use, may have been fixed to the freehold.

Flaccus, Caius Valerius; a Roman poet of the latter half of the 1st century, who lived in Padua (*Patavium*), and died young. He sung the expedition of the Argonauts in an epic poem (*Argonautica*), of which seven books and part of the eighth have remained to us. His model was the Alexandrian Apollonius Rhodius. Flaccus cannot be compared with Virgil, yet his poem is not without peculiar beauties and fine passages. His early death prevented him from giving it its highest polish. New editions, from those of Nicholas Heinsius and Peter Burmann, have been published by Harles (1781) and Wagner (1805) with commentaries.

Flacius, Mathias, surnamed *Illyricus*, a celebrated theologian, born at Albona, in

Illyria, 1520, died at Frankfort on the Maine, in 1575. His true name was *Flach*, to which he gave the Latinized form of *Flacius*, according to the custom of his age. He was a pupil of Luther and Melancthon, and was so rude and violent in his religious controversies, that even now, in some parts of Germany, rude, vulgar fellows are called by a term derived from his name, *Fläz*.

Flag; an ensign or colors, a cloth on which are usually painted or wrought certain figures, and borne on a staff;—in the army, a banner by which one regiment is distinguished from another;—in the marine, a certain banner by which an admiral is distinguished at sea from the inferior ships of his squadron; also the colors by which one nation is distinguished from another. In the British navy, flags are either red, white or blue, and are displayed from the top of the main-mast, fore-mast or mizzen-mast, according to the rank of the admiral. When the flag is displayed at the main-top-gallant-mast head, the officer distinguished thereby is known to be an admiral; when from the fore-top-gallant-mast head, a vice-admiral; and when from the mizzen-top-gallant-mast head, a rear-admiral. The union is the highest admiral's flag. The next flag after the union is white at the main; and the last, 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 mizzen-top-gallant-mast head. The lowest flag in this navy is, accordingly, blue at the mizzen. 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-colored flag, red, white and blue. 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 mizzen shrouds. The flags borne on the mizzen are particularly called *gallants*.—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 the like. To hang out the red flag, is to give a signal of defiance and battle. To lower or strike the flag, is to pull it down upon the cap, or to take it in, out of the respect or submission due from all ships or fleets, to those any way justly their superiors. 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. Livy relates that this was the way the Romans used the vessels of Carthage. (For further information, see *Standards*.)

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 place 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 13th 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, begging alms. In 1261, they broke over the Alps in crowds into Germany, showed themselves in Alsatia, Bavaria, Bohemia and Poland, and found there many imitators. In 1296, a small band of Flagellants appeared in Strasburg, who, with covered faces, whipped themselves through the city, and at every church. The princes and higher clergy were little pleased with this new fraternity, although it was favored by the people. The shameful public exposure of the person by the Flagellants offended good manners; their travelling in such numbers afforded opportunity for seditious commotions, and irregularities of all sorts; and their extortion of alms was a severe tax upon the peaceful citizen. On this account, both in Germany and in Italy, several princes forbade these expeditions of the Flagellants. The kings of Poland and Bohemia expelled them with violence from their states, and the bishops strenuously opposed them. In spite of

this, the society continued under another form, in the fraternities of the *Beghards*, (see *Beguines*), in Germany and France, and in the beginning of the 15th century, among the *Brothers of the cross*, so numerous in Thuringia (so called from wearing on their clothes a cross on the breast and on the back), of whom 91 were burnt at once at Sangershausen, in 1414. The council assembled at Constance, between 1414 and 1418, was obliged to take decisive measures against them. Since this time, nothing more has been heard of a fraternity of this sort. (See *Flagellation*).

Flagellation has almost always been used for the punishment of crimes. Its application as a means of religious penance is an old Oriental custom, admitted into Christianity partly because self-torment was considered salutary as mortifying the flesh, and partly because both Christ and the apostles underwent scourging. From the 1st century of Christianity, religious persons sought to atone for their sins, and to move an impartial Judge to compassion and pardon, by voluntary bodily torture. Like the abbot Regino, at Prum, in the 10th century, many chose to share in the sufferings of Christ, in order to make themselves the more certain of forgiveness through him. It became general in the 11th century, when Peter Damiani of Ravenna, abbot of the Benedictine monastery of Santa Croce d'Avellano, near Gubbio, in Italy, afterwards cardinal bishop of Ostia, zealously recommended scourging as an atonement for sin, to Christians generally, and, in particular, to the monks. His own example, and the fame of his sanctity, rendered his exhortations effective. Clergy and laity, men and women, began to torture themselves with rods, and thongs, and chains. They fixed certain times for the infliction of this discipline upon themselves. Princes caused themselves to be scourged naked by their father confessors. Louis IX constantly carried with him, for this purpose, an ivory box, containing five small iron chains, and exhorted his father confessor to scourge him with severity. He likewise gave similar boxes to the princes and princesses of his house, and to other pious friends, as marks of his peculiar favor. The wild expectation of being purified from sin by flagellation, prevailed throughout Europe in the last half of the 13th century. "About this time," says the monk of Padua, in his chronicles of the year 1260, "when all Italy was filled with vice, the Perugians suddenly entered upon a course never before thought of; after them, the Romans, and at length all Italy. The fear of Christ exerted upon the people so strong an influence, that men of noble and ignoble birth, old and young, traversed the streets of the city naked, yet without shame. Each carried a scourge in his hand, with which he drew forth blood from his tortured body, amidst sighs and tears, singing, at the same time, penitential psalms, and entreating the compassion of the Deity. Both by day and night, and even in the coldest winters, by hundreds and thousands, they wandered through cities and churches, streets and villages, with burning wax candles. Music was then silent, and the song of love echoed no more: nothing was heard but atoning lamentations. The most unfeeling could not refrain from tears; discordant parties were reconciled; usurers and robbers hastened to restore their unlawful gains; criminals, before unsuspected, came and confessed their crimes, &c." But these penances soon degenerated into noisy fanaticism and a sort of trade. The penitents united into fraternities called the *Flagellants* (q. v.), of which there were branches in Italy, France and Germany. After the council of Constance (1414—18), both clergy and laity by 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. 3000 strokes, and the chanting of 30 penitential psalms, were sufficient to cancel the sins of a year; 30,000 strokes, the sins of 10 years, &c. An Italian widow, in the 11th 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 honor 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.

Flageolet; 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 sounds, besides those at the bottom and mouth-piece and that behind the neck.

Flail; an instrument for thrashing corn, that consists of—1. the hand-staff, which the laborer holds in his hand; 2. the swiple, or that part which strikes the corn; 3. the caplins, or leathern thongs that bind the hand-staff and swiple; 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 codfish. They are usually placed near the shores of fishing-harbors.—*Flake* signifies also a small stage hung over a ship's side to calk or repair any breach.—We speak also of a *flake* of snow. (See *Snow*.)

Flambeau; a kind of large taper, made of hempen 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; and then pour on more wax, till the flambeau is brought to the size required. Flambeaus 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 vapor, 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 hydrogen gas, with more or less of charcoal. When the circumstances are not favorable to the perfect combustion of these products, a portion of the coal 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 matter is completely consumed 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 is to say, if it be too thick—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 atmospherical air which comes in contact with the vapor 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 furnaces, where the luminous part is merely superficial, or of 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 fluid itself from burning. And in the lamp of Argand, 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 circumambient air, the quantity of light becomes increased to eight or ten times what a long snuff would have afforded. (See *Caloric*, *Combustion*, *Fire*, and *Damps*.)

Flamel, Nicholas; an *adept* of the 14th 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 inquire into the means by which he had become so opulent. Flamel'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 died 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 25th of April, in the same year, in the presence of his wife, at about five o'clock in the afternoon, converted the same quantity of quicksilver into pure gold." Flamel 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, Flamel, 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 Flamel, but who affirmed that both he and his wife were yet alive, were then about 400 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 Flamel 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 as spurious. Among them are *Sommaire 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, *flamen Dialis*, the priest of Jupiter (from *flamen* Διός, Jovis), who was the highest of all the flamens; and *flamen 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, 12 in number) were called *minores*. When the emperors were deified, they, also, had flamens, as the *flamen Augusti*.

Flamingo (*phœnicopterus*, 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 higher than it is wide, light and hollow, 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-colored 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 flying, they form a triangle. Their food appears to be *molluscæ*, 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 beak. They breed in companies, in in-

undated marshes, raising the nest to the height of their bodies, by heaping up the mud, with their feet, into a hillock, which is concave at the top. On the top of this pyramid, the female 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 repute among the luxurious Romans; 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 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 snares, 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* (Temm.), of a rose color, 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 precarious state of health, he was not sent to the university. He was early led into astronomical studies by a perusal of Sacrobosco's book *De Sphæra*, and prosecuted them with so much ardor 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 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, with a salary of £100 a year. About this time, having graduated M. A., he took orders, and obtained the living of Burstow, in Surrey. The royal observatory at Greenwich was soon after erected, where he resided for the remainder of his life, assiduously employed in the cultivation of his favorite science. He died in 1719, when he had printed a great part, and, with a slight exception, prepared for the press, the whole of his great work, *Historia Cœlestis Britannica*, 3 vols., folio, which was published in 1725.

Flanders; 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 18th century, it was divided into French, Austrian and Dutch Flanders. French Flanders now forms the French department of the North. The other two parts belong to the kingdom of the Netherlands, and are divided into two provinces, East and West Flanders. Dutch Flanders was a small territory, now forming a part of the province of East Flanders.

East Flanders; province of the Netherlands, 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. It is divided into 3 circles—

Ghent, Dendermond and Eecloo. 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 pasturage.

West Flanders; a province of the Netherlands, 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. It is divided into four circles—Bruges, Furnes, Ypres and Courtray. Bruges is the capital; Ostend the principal harbor. 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. (For further information, see *Netherlands.*)

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 join the central wall.—In tactics, *flank* signifies the outer extremity of the wing of an army; and it is one of the most common manœuvres 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 manœuvre is called *outflanking.* A bold, but not always practicable manœuvre, 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.

Flanqueurs (from the *French*); cavalry scouts, employed partly to observe, partly to harass the enemy. This name is used in many of the European armies.

Flassan, Gaëtan de Raxis de, historiographer to the French department of foreign affairs, is descended from a family of Greek extraction, on which pope Paul III, in 1536, conferred the *seigneurie* of Flassan, in the county of Venaissin. Flassan's father was a soldier. He himself was educated in the same military school which produced Napoleon, Champagny, Clarke, Bourgoing, Duroc, &c. He then lived some time at Rome, where his brother was an officer in the guards. Pius VI, who was favorably disposed towards him, gave him a lay benefice. In 1787, he returned to Paris, where, in 1790, he published his *Question du Divorce.* In 1791, he joined the emigrants at Coblentz. After the dissolution of the corps of Condé, he spent two years in Florence and Venice. When the reign of terror in France was at an end, he returned to Paris, entered on the diplomatic career, and was appointed head of the first division in the ministry of foreign affairs, but soon resigned that post. Being suspected of an intention to emigrate, he was ordered to be arrested, but made his escape by locking up the police officers in his room. He then concealed himself in Marseilles. After the 18th of Brumaire, he returned to Paris, where he wrote his great work on French diplomacy. The first consul had expressed a wish, to the deputies of the historical class of the national institute, to see such a work. Flassan was aided in this work by his connexions with distinguished statesmen and scholars, and by the use he was permitted to make of the archives. It appeared in 1808, under the title *Histoire Générale de la Diplomatie Française jusqu'à la Fin du Règne de Louis XVI, avec des Tables Chronologiques de tous les Traités conclus par France* (6 vols.; new edition, Paris, 1811, in 7 vols.). This work, drawn from the treaties, manifestoes, notes, instructions, and reports of the persons actually engaged, in which the materials are elaborated with critical acuteness, and the facts judiciously arranged (though it is not free from prejudices), has given the author a deserved reputation. Besides the history of the treaties, &c., it describes the organization of the department of foreign affairs, and the characters of the ministers of state, and of the foreign ministers, at different periods. In the decennial report on works worthy of prizes, it is said, *Il n'est pas remarquable par l'art de la composition, et l'on y désirerait plus d'élégance dans le style.* Until 1814, Flassan was professor of history in the military school at St. Germain-en-Laye.. Among other publications, he has written *De la Colonisation de St. Domingue* (1804); *De la Restauration Politique de l'Europe et de la France* (1814), and *Des Bourbons de Naples* (1811). After the fall of Napoleon, Flassan announced a History of French Diplomacy, from 1791 to the peace of Paris, in 6 vols. From the debates on the budget of 1822, it appeared that Flassan received a pension of 12,000 francs annually, to prevent him from publishing this work. As historiographer of the department of foreign affairs, he accompanied the French embas-

sy to Vienna in 1814. He has written a *Histoire du Congrès de Vienne*, 3 vols.

Flat; a character which, being placed before a note, signifies that the note is to be sung or played half a tone lower than its natural pitch. (See *Key*.)

Flat; a level ground lying at a small depth under the surface of the sea; otherwise called a *shoal* or *shallow*.

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 18 inches to two feet high; the leaves, alternate, entire, and lanceolate or linear; the flowers, blue and pedunculate, consisting of five petals, and succeeded by capsules of ten 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 about the mouths of the Nile; and it is worn almost exclusively by the inhabitants. Syria, Barbary, 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 rags, after 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 in situations not much exposed to the 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 this country, 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 the rains of autumn and winter favor 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 general, however, in order to prevent its degenerating, it is sufficient to change the soil frequently, by sowing in the heavier lands the seed 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, ripens 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 cuscuta, a parasitical plant, consisting of yellowish or reddish filaments, and small white flowers: all the stems which have this plant attached 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 placed even at the base, are again tied together in bundles for rotting—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, as only ten days are necessary; but the fibres are of inferior quality; 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 machinery. It is afterwards heckled or combed with a sort of iron comb, beginning with the coarser and ending with the finer, and is now ready for spinning. Flax is now extensively cultivated in the U. States, and its various products have become, with us, important articles of commerce.

Flax, New Zealand (*formium tenax*). The fibres of this plant are used, by the inhabitants of New Zealand, for cords and clothing, instead of hemp 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 paniculate 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 in 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 remained 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 upwards, 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-sets which are separated in the spring. The method by which the New Zealanders obtain the fibres is very tedious; accordingly, the French chemists have devised other modes, which promise success. The New Zealand flax is not uncommon in the green-houses about Philadelphia, but we have not heard of any experiments with it in the open air.

Flaxman, John, an 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 Æschylus which at once made him known in Europe. The illustrations of Homer and Æschylus 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 he was diligently occupied with his professional pursuits, until his death, in 1826. He had been elected an associate of the royal academy, in 1797, royal academician, 1800, and, in 1810, was appointed professor of sculpture to that institution. His lectures have been published since his death (8vo., London, 1829, 52 plates). His monument of lord Mansfield, in Westminster abbey, is considered the finest public monument in England. His monuments to 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 basso-relievos in front of Covent Garden theatre, and the exterior ornaments of the new palace, were designed by him. His illustrations of Homer, Æschylus and Dante have

been republished in Germany, and in Paris by Nitot Dufresne, year XI. The great success of these works is, no doubt, owing partly to their excellence, but partly, also, to the time in which they appeared, because the art was then in a low state. Göthe, in his work called *Winkelmann and his Century*, says, "Flaxman's sketches contain, undeniably, many happy ideas; he has imitated, in his illustrations of the Greek poets, the style of antique pictures on vases and basso-relievos, whilst, in the representations from Dante, he has exhibited the simplicity of old Florentine pictures; still, however, the most successful of these works are but sketches, and only valuable in this respect." The Germans think that he excelled much more in his sketches than in his works of sculpture.

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, father Audiffret, superior of the congregation of the Christian doctrine, of which young Flechier became a member. He made a 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 Lavaur, on which occasion that prince said to him—"I have made you wait some time for a place which you have long deserved, but I was unwilling sooner to deprive myself of the pleasure of hearing you preach." He was translated from the diocese of Lavaur 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, endeavoring 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 honorable orders in Europe, was established by Philip III of Burgundy, surnamed 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 beginning 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. He declared himself grand-master, and 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 steels, 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 24 to 31; Charles V, his grandson, to 51. The last chapter was held in 1559, 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, after the war of the Spanish succession, the Spanish, 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 great-master; the other knights wear a golden fleece on a red ribbon. The Spanish golden fleece differs from the Austrian by the inscription *Pretium laborum, non vitæ*, 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 ORDER OF THE THREE GOLDEN. August 15, 1809, in the camp at Schönbrunn, Napoleon added a third order to those of the legion of honor 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 held 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 regiments which had been present in the great battles of 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 into the order, 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 Andreossi, chancellor of the order, and count Schimmelpenninck, treasurer.

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 Worcester, he bore the rank of lieutenant-general; and, becoming allied to the family of the protector, by marrying his daughter, after the decease of her 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, at Stoke Newington.

FLEMISH SCHOOL OF ARTS. (See *Netherlands.*)

FLEMMING, or FLEMMIG, Paul, one of the best German poets of the 17th century, was born October 17, 1609, at Hartenstein, in the county of Schönburg. After a good foundation for his education had been laid, by private instruction at home, he went to the royal school at Meissen, and from there to Leipsic, where he studied medicine. The confusions of the 30 years' war obliged him, in 1633, 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 ardor 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 undertake this journey also, which promised him a large stock of information. The embassy set out October 27, 1635, and entered Ispahan 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 Reval, Flemming fell in love with the daughter of a respectable merchant, and, as it was 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 et 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 17th century, by W. Müller, 3 vols. (Leipsic, 1822). An earlier and more extensive selection was made by Gustavus Schwab (Stuttgart, 1820).

FLESH; the muscles of animals. These consist chiefly of fibrin, with albumen, gelatin, extractive phosphate of soda, phosphate of ammonia, phosphate and carbonate of lime, and sulphate of potash.

FLETCHER, Andrew, a Scottish political writer and patriot, was the son of sir

Robert Fletcher, of Saltoun. 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 1683, he came over to England to take measures with the friends of liberty against the designs of James II; and, in 1685, 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, the duke dismissed him. He then repaired to Spain, and afterwards to Hungary, where 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 1698, he printed A Discourse on Government, in Relation to Militias; 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" (Anne), 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 Overy, Southwark. The plays of Beaumont and Fletcher consist of comedies, tragedies, and mixed pieces, which possess many poetical beauties, and 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 plan, 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 Shakspeare; but the license assumed in the greater part of these 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 Piscatory Eclogues. The former is an allegorical description of man, 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 loses the poet in the anatomist—a character 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 coloring. His Piscatory 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 Helgay, in Norfolk. His two works above mentioned were printed together in 1630.

Fleurieu, 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 13, and distinguished himself by his uncommon activity 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 sea-chronometer, invented by him and the watch-maker 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 surpassed all expectation. Fleurieu then published his excellent work, *Voyage fait par Ordre du Roi en* 1768 *et* 1769, *pour éprouver les Hor-*

loges Marines (Paris, 1773, 4 vols., with plates). In 1776, he received the important post of director of the harbors 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 Entrecasteaux, of which, however, Louis XVI, himself a skilful geographer, furnished the general plan. In 1790, Fleurieu 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 Fleurieu. Other geographical and hydrographical works, as his *Atlas de la Baltique et du Cattegat*, and his *Neptune Americo-septentrional*, 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 Flerus; a town of the Netherlands, in the province of Hainault, on the river Sambre, six miles N. E. of Charleroy. The population is 2400. It is remarkable for having been the seat of four battles fought near it—in 1622, 1690, 1794 and 1815; the first on the 30th of August, 1622, between the troops of Spain and some German troops. 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 5000 killed and 4000 prisoners, 49 pieces of cannon, 8 pair of kettle-drums, and 92 standards and colors. 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 French, called the *battle of Ligny.* (q. v.)

Fleury, André Hercule de, cardinal and prime minister of Louis XV, born at Lodève, in Languedoc, in 1653, 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 favor, by his pleasing person and fine understanding; became almoner of the queen, and afterwards of the king. In 1698, Louis XIV gave him the bishopric of Frejus, and, shortly before his death, appointed him instructer to Louis XV. In the troubled times of the regency, he knew how to retain the favor of the duke of Orleans, by asking for no favors, and keeping clear of all intrigues. The duke, who remarked 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, rather than be separated from his pupil. In 1726, he was made cardinal, and soon after, the young king, Louis XV, placed him at the head of the ministry. From that time, from his 73d to his 90th year, he administered the affairs of his country with great success. The war which he began, in 1733, against Charles VI and the German empire, on account of the election to the crown of Poland, he ended with glory. By the peace of 1736, he added Lorraine to France. On the other hand, the war of the Austrian succession was unfortunate for the French. Fleury died before its termination, at Issy, near Paris, January 29, 1743. The object of his politics was the maintenance of peace. During his ministry, France mediated between the emperor and Spain, between the Porte, Austria and Russia, and attempted, several times, a reconciliation between England and Spain. Thus Fleury directed, with wisdom and discretion, the affairs of Europe, until 1740. The war which then broke out is the only stain upon his name. The two brothers Belle-Isle abused their own influence and his advanced age, persuading him, that, by a moderate effort, he might crush the power of Austria—a hope which was disappointed by the heroic courage of Maria Theresa. When Fleury was placed at the head of the state, France was in a miserable condition. The finances were ruined, commerce had declined, credit was lost, the court despised, the church in confusion, the corruption of manners universal, the nation impoverished and weak-

ened, and threatened by foreign enemies. Fleury, less proud than Richelieu, and less artful than Mazarin, healed the wounds of his country, and, without blood-shed or cruelty, established and increased the internal happiness of France and its national glory.

Fleury de Chaboulon, P.A. Edouard; baron; formerly cabinet secretary to Napoleon. In his 15th year, he was commander of a battalion of the national guard; in his 16th, he marched, with the Paris insurgents, on the 13th Vendémiaire (5th October), 1795, against the national convention; was taken prisoner, and owed his life to the interest excited by his youth. Being employed under the minister Fermont, in the department of finance, his integrity contributed to preserve the public treasury from frequent peculation. As auditor of the state council, he was engaged in the administration of the domains, and afterwards obtained the important place of sub-prefect at Château-à-Bois, in the department of the Meurthe, where he introduced the practice of vaccination at his own expense. Napoleon granted him, on this account, in 1804, one of the two medals of honor conferred on the most meritorious civil officers. In the scarcity of 1812, he collected large contributions for the relief of the sufferers. With the same spirit, he took measures within his own district, in 1813, to arrest the progress of the fever, which was spread by the soldiers who returned from the campaign in Germany. At the entrance of the allies into France, in addition to his civil offices, he was obliged to take a military command. He was, at last, driven from his post, by the advanced guard of the enemy, and came as auditor to Napoleon's head quarters. The emperor intrusted him with several messages, and afterwards made him prefect of Rheims, which Corbineau had retaken from the enemy. Fleury, according to his orders, sounded the tocsin, and called the people to arms. The general of the enemy threatened death to any magistrate who should order the tocsin to be sounded. The intrepid prefect continued to scatter his energetic proclamations at the very moment when 25,000 Russians, after repeatedly summoning the city in vain, were taking it by storm. Fleury escaped the search of the enemy, and remained concealed in the city until Napoleon's last victory gave him his life and freedom. After the restoration of the Bourbons, he went to Italy, but returned to France the day on which Napoleon landed, and became his private secretary. As he relates, in his *Mémoires pour servir à l'Histoire du Retour et du Règne de Napoléon, en* 1815, he was afterwards employed in a mission to Bâle, which was so successful, according to his account, that negotiations were commenced between Napoleon and Austria, though they were interrupted by the battle of Waterloo. After Napoleon's abdication, Fleury, who was banished by the royal edict of March 6, 1815, went to London, where he published the work we have mentioned; in which he explains the causes which conduced to the return of Napoleon, and offers to his fallen master the homage of his love and admiration.

Flibustier. (See *Buccaneer.*)

Flint; a mineral which occurs of all colors, 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 lime-stone. This mineral consists of 98 silica, 0.50 lime, 0.25 alumina, 0.25 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 bringing off, at each stroke, a splinter sharp at one end, and thicker at the other. The splinters are afterwards shaped at pleasure, by laying the line at which it is wished they should break, upon a sharp instrument, and then giving it small blows with a mallet. (See *Quartz.*) Large manufactures of gun-flints exist at Muesnes in Berry, in Galicia, and at Avio in the Tyrol.

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 may be made of logs of yellow pine, from 30 to 50 feet long, and from 18 to 20 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 *break-waters* are admirably adapted to bathing-places and swimming stations, since they will always produce smooth water, and protect the machines.

Floetz, Floetz Formations. (See *Geology*, and *Geognosy.*)

Flögel, 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 Liegnitz, where he remained until his death, in 1788. He published a History of the Human Understanding (Breslau, 1765; 3d ed. 1776); History of the present State of Literature in Germany (Jauer, 1771); History of Comic Literature (Liegnitz and Leipsic, 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 satirists of ancient and 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 (farces at Christian festivals, comic feasts and comic societies), ibid. 1788; 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.

Flood. (See *Tide*, and *Deluge*.)

Floor Timbers are those parts of the ship's timbers which are placed immediately across the keel, and upon which the bottom of the ship is framed; to 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 Floralia were celebrated in her honor at Rome with much licentiousness. In botany, *Flora* signifies a catalogue of plants, as, in zoology, *Fauna* signifies a catalogue of quadrupeds.

Floral Games. (See *Jeux Floraux*.)

Floréal (*month of flowers*); the eighth month in the calendar of the French revolution. It began April 20, and ended May 19. (See *Calendar*.)

Florence (Italian, *Firenze*), capital of the grand-duchy of Tuscany, and seat of the government, contains 10,000 houses and 76,000 inhabitants. Its situation, its treasures of art, particularly in the departments of architecture and painting, the remarkable historical events of which it has been the theatre, and its manufactures, all contribute to give it great celebrity. It is situated in a beautiful and fertile valley, 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 middle ages, Florence rose to a degree of wealth and power which placed her far above all the neighboring 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 (the 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 Granduca*). It is to be regretted that the exterior of most of the churches is unfinished; but, in the interior, the architecture and decorations are generally executed in a highly finished style. The cathedral (*la chetra politana*), a gigantic fabric of the 13th century, the whole exterior of which is cased with black and white marble, is adorned with a lofty dome, the work 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 (q. v.) and Andrea Pisano. The cathedral is described in the work *La Metropolitana Fiorentina 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 immortalize Michael Angelo. 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 mausoleums of the distinguished dead; among which are those of Michael Angelo, Machiavelli, Galilei and Alfieri. The churches of St. Mark, St. Annunciata (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. Trinità, 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, Raphael, &c. In the palaces, also, there are 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 *Madonna della Sedia*, 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 the value of the works it contains. (A collection of sketches from this gallery has been executed in 100 parts, by the conservators Zannoni, Maltalvi and Bargigli, under the direction of Pietro Benvenuti.) 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 *Fornarina*, 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 incisa in Cartonni* (Flor., 1821). The collection of nearly four hundred portraits of the most celebrated painters, by 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 Raf. Morghen, 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 Della Crusca*, the academy of Georgofili, &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 and rare printed books. The museum of natural 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 men, under the guidance of able teachers, pursue the study of medicine theoretically and practically, and enjoy the benefit of medical 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 splendor 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. Refinement, 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. The environs resemble 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 visiters; and the villas of the grand-duke, Poggio

Imperiale, Careggi, Pratolino (with the statue of the Apennines), Poggio a Caïano, all of them richly adorned, both by nature and art, are also charming places for excursions. Florence is justly called *la bella*, and Rome itself is hardly more attractive to the traveller. The *Nuova Guida per la Città di Firenze* (with views; Florence) is very useful to the traveller.

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, member of the French academy, a prolific writer, full of grace and spirit, 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 favorite. 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 favorite. At the same time, he distinguished himself by his poem called *Voltaire et le Serf du Mont Jura*, and the eclogue of Boaz and Ruth. His *éloge* 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 Ephraim, 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, Sept. 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 coloring. His descriptions of manners are striking and faithful, particularly his pictures of pastoral life, as, for instance, in his favorite *Estelle*. As a writer of fables, he ranks immediately after La Fontaine. Voltaire called him by the tender name of *Florianet*, which paints 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*, *Gonzalve de Cordoue*, *Numa Pompilius*, and, among his dramatic works, the above mentioned *Deux Billets*. His *Don Quixote* may be read as a French original, and is highly interesting, however little it may be esteemed by later translators. The work did not appear until after the death of the author.

Florida; a country belonging to the United States, 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 Appalachicola to the parallel of lat. 31° N., thence due west on 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. Lon. 80° 25′ to 87° 20′ W.; lat. 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 sea shore 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 upwards of 200 miles, forms a prominent feature of the country. The great swamp Ouaquephenogaw or Okefonoco, 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, are light and sandy; and they are represented as not capable of sustaining a continual succession 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 yellow and pitch pine; also shrubs 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 because it rises in mounts or small tufts among 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. *Swamps.* 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. The fresh water marshes produce an abundance of wild oats. 6. A species of marsh, called *galen*, consisting of water-courses covered with spongy 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 colors of its flowering 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 silvered over with large milk-white flowers, frequently eight or nine inches in diameter. There are eight different kinds of oak, among which is the live oak, which, after forming a trunk from 10 to 20 feet high, and from 12 to 18 feet in circumference, spreads out its branches, in some instances, 50 paces on every side. The cypress, generally growing in watery places, has large roots like buttresses, rising around its lower extremity; then, rearing a stem of 80 or 90 feet, it throws out a flat, horizontal top, like an 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 population of the country is very small (for its amount in 1830, see *United States*). 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 China 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 general, 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 endured 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 governor of Florida, don Galvez, conquered West Florida; and, by the 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.

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 Grimaldi, the minister of foreign affairs, desired him to nominate his successor. Grimaldi recommended Monino, who was accordingly created count Florida-Blanca, and received the department 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 most important subjects of general police, particularly in the capital; embellished Madrid, and was on every occasion the active friend of the arts and sciences. He endeavored to confirm the good understanding which existed between the courts of Spain and Portugal, by a double intermarriage (1785). 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 imprisoned in the citadel of Pampelona, 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 80 years.

Florin is sometimes used for a coin, and sometimes for a money of account. The florin coin is of different values. The gold florins are most of them of a coarse 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 1*s.* 8*d.* (See *Coin.*)

Floris, Francis, a painter, whose family name was Vriendt, born at Antwerp in 1520, was called by his 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 master-pieces 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 coloring and his figures are reproached with dryness and stiffness. After his return to his native country, he was engaged to execute important paintings, and soon acquired a considerable 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. Most of his works, and, in particular, his triumphal arches, made on the occasion of the entry of Charles V and Philip II into Antwerp, and his 12 labors 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 120, amongst whom were his two sons; one of whom, Francis Floris, has some celebrity as a painter.

Florus, Lucius Annæus; a Roman historian, probably a native of Spain or Gaul. He lived in the beginning of the 2d 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 that it has come down to us with interpolations in facts and language. The best edition is that of Duker (Leyden, 1744); later ones are by Fischer (1760), and Titze (1819).

Flos, in chemistry; the most subtile 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 into the sea are so heavy that they sink to the bottom, and therefore the mariners fasten to them 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 heightening the effect of the composition, 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 ideas. With performers of little taste, plain passages are indiscriminate invitations to ornament; and too frequently in the *flourish*, the beauty of a studied simplicity is at once overlooked and destroyed. Auditors who are fonder of execution than of expression, and more alive to flutter than to sentiment, 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;* but of late it is become more common, being borne in some coats one, in others three, in others five, and in some *semée*, or spread all over the escutcheon in great numbers.

Flowers, Artificial; a considerable article of French manufacture. They were first made at Siena, in Tuscany; and Florence, Milan, Venice, 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, Bordeaux, 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 odor 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 still in use, though not generally, the terms *flowers* of sulphur, benzoin, &c.

Flowers, Language of. In the youthful and imaginative period of nations, flowers, as well as colors, 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 signification 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 seclusion of women in the East, and their ignorance of writing,*

* Doctor Madden, in his Travels in Turkey, Egypt, Nubia and Palestine (London, 1828, Philad., 1830), says, "In all my travels, I only met one woman who could read and write, and that was in Damietta; she was a Levantine Christian,

connected with their lively imagination, which personifies every object, must be considered as the chief causes of the invention of this 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 particular hour after sunset, or before sunrise, 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 notions, such as "thy grief pains me," &c.; but their life is so unvaried, 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 inmate of the harem. 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, incapable of expressing the complicated ideas springing 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 hyacinth is occasionally dropped in her path by an unknown hand, and the female attendant at the bath does the office of a Mercury, and talks of a certain effendi seeking a lady's love, as a nightingale aspiring to the affections 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 every thing*; whilst a rose without leaves means *there is no hope*. In the works on this subject, published in Europe (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 Antimony. (See *Antimony*.)

Flowers of Sulphur. (See *Sulphur*.)

Flowers, Painting of, in the art of painting; the representation of flowers, which forms a department of the art by itself. 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, Segher, Verendael, Mignon, Rœpel, Dressler. (See *Painting*.)

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 a single semper-Augustus; for three of them together, 30,000 fl.; for 148 grains weight, 4500 fl.; for 296 grains of admiral-Liefkenshoek, more than 4000 fl.; for admiral-Enkhuizen, more than 5000, &c. For a viceroy, on one occasion, was paid 4 tons of wheat, 8 tons of rye, 4 fat oxen, 8 pigs, 12 sheep, 2 hhds. of wine, 4 bbls. of beer, 2 bbls. 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 90,000 fl. An individual in Amsterdam gained more than 68,000 florins, by this trade, in four months. In one city 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 25—150 fl. the price of a single rare tulip, in the catalogues of the Haarlem florists. Until the time of the French revolution, the florists of Haarlem obtained their bulbs principally from Lisle, and other towns in Flanders, where the clergy were engaged in raising them. They afterwards carried on the business themselves; but the whole trade is 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 hyacinths, but also of ranunculuses, auriculas, pinks, anemones, &c., the demand for which has been gradually increasing, partly from that source, and

and her peculiar talent was looked upon as something superhuman.

partly from foreign countries. Haarlem still continues to be the emporium for the most beautiful of these articles. Hyacinths first began to rise in estimation in 1730. In that year, 1850 fl. were paid for passe-non-plus-ultra, and in the same proportion for others. Between Alcmaer and Leyden there are more than 20 acres of land appropriated to hyacinths alone, which thrive best in a loose and sandy soil. There are still 12 or 13 great florists in and around Haarlem, besides a number of less 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 it more nearly perpendicular than 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.

Floyd, William; the first delegate from New York that signed the declaration of independence. He was born on Long Island, Dec. 17, 1734, and was left, in his youth, heir to a large estate. His education was limited, but his natural intelligence great, and his character elevated. He took part early in the controversy between Great Britain and the colonies, on the side of the latter. He was first elected a delegate from New York to the continental congress of 1774, and continued an active member of it until after the declaration of independence. During the war, his property was laid waste, and his mansion occupied by the enemy. He commanded the militia of Long Island, served as senator of the state of New York, and, from 1778, when he was again elected to represent the state in the continental congress, he remained in the national councils, until the expiration of the first congress, under the present federal constitution. He ended his days, Aug. 4, 1821, aged 87 years, on a farm upon the Mohawk river, which he began to cultivate in 1784, and to which he removed, with his family, in 1803. His memory is honorable in every respect. He was a faithful and favorite public servant for more than 50 years.

Fluates, in chemistry; salts first discovered by Scheele, and distinguished by the following properties: When sulphuric acid is poured upon them, they emit acrid vapors of fluoric acid, which corrode glass. When heated, several of them phosphoresce. They are not decomposed by heat, nor altered by combustibles. They combine with silica by means of heat. Most of them are sparingly soluble in water.

Flüe, Nicholas von der, born in the village of Saxeln, in the canton of Unterwalden, lived with his parents and children on the paternal estate, and was celebrated for the purity of his life. 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 *landamman*, 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 50, after having faithfully fulfilled the duties of a good citizen, and become the father of ten children, he determined, 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 Saxeln, 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 Nancy, had not been faithfully divided; the larger aristocratic towns made common cause, and wished to receive Freyburg and Soleure into the confederacy, to which the smaller democratic cantons were opposed. An assembly of the deputies of the confederated cantons, which was held at Stantz (the capital of the canton of Unterwalden), in 1481, for the purpose of taking these affairs into consideration, was agitated 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, famous in Swiss history as the covenant 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, 1487, at the age of 70 years. All Unterwalden followed his body to the tomb, and all Switzerland mourned his death; foreign princes honored his memory; and, in 1671, Clement X caused him to be beatified.

Fluent, in fluxions; the flowing quantity, or that which is continually increasing or decreasing, whether line, surface, solid, &c. (See *Calculus*.)

Fluid, in physiology; an appellation given to all bodies which yield, without separation, to the slightest pressure, easily move among themselves, and accommodate themselves to all changes of position, so as always to preserve a level surface. All fluids, except those in the form of air or gas, are incompressible in any considerable degree. All fluids gravitate or weigh in proportion to their quantity of matter, not only in the open air, or *in vacuo*, but in their own elements. Although this law seems so consonant to reason, it was supposed by ancient naturalists, who were ignorant of the equal and general pressure of all fluids, that the component parts, or the particles of the same element, did not gravitate or rest on each other; so that the weight of a vessel of water, balanced in air, would be entirely lost when the fluid was weighed in its own element. The following experiment seems to leave this question perfectly decided: take a common bottle, corked close, with some shot in the inside to make it sink, and fasten it to the end of a scale beam; then immerse the bottle in water, and balance the weight in the opposite scale; afterwards open the neck of the bottle, and let it fill with water, which will cause it to sink; then weigh the bottle again. Now it will be found that the weight of the water which is contained in the bottle is equal to the difference of the weights in the scale, when it is balanced in air; which sufficiently shows that the weight of the water is the same in both situations. As the particles of fluids possess weight as a common property of bodies, it seems reasonable, that they should possess the consequent power of gravitation which belongs to bodies in general. Therefore, supposing the particles which compose fluids to be equal, their gravitation must likewise be equal; so that in the descent of fluids, when the particles are stopped and supported, the gravitation being equal, one particle will not have more propensity than another to change its situation; and, after the impelling force has subsided, the particles will remain at absolute rest. From the gravity of fluids arises their pressure, which is always proportioned to the gravity. For if the particles of fluids have equal magnitude and weight, the gravity or pressure must be proportional to the depth, and equal in every horizontal line of fluid; consequently, the pressure on the bottom of vessels is equal in every part. The pressure of fluids upwards is equal to the pressure downwards, at any given depth. For, suppose a column of water to consist of any given number of particles, acting upon each other in a perpendicular direction, the first particle acts upon the second with its own weight only; and, as the second is stationary, or fixed by the surrounding particles, according to the third law of motion, that action and reaction are equal, it is evident that the action or gravity, in the first, is repelled in an equal degree by the reaction of the second; and, in like manner, the second acts on the third, with its own gravity added to that of the first; but still the reaction increases in an equivalent degree, and so on throughout the whole depth of the fluid. The particles of a fluid, at the same depth, press each other equally in all directions. This appears to rise out of the very nature of fluids; for, as the particles give way to every impressive force, if the pressure amongst themselves should be unequal, the fluid could never be at rest, which is contrary to experience; therefore we conclude that the particles press each other equally, which keeps them in their own places. This principle applies to the whole of a fluid as well as a part. For if four or five glass tubes, of different forms, be immersed in water, when the corks in the ends are taken out, the water will flow through the various windings of the different tubes; and rise in all of them to the same height as it stands

in the straight tube: therefore the drops of fluids must be equally pressed, in all directions, during their ascent through the various angles of the tube; otherwise the fluid could not rise to the same height in them all. From the mutual pressure and equal action of the particles of fluids, the surface will be perfectly smooth, and parallel to the horizon. If, from any exterior cause, the surface of water has some parts higher than the rest, these will sink down by the natural force of their own gravitation, and diffuse themselves into an even surface. (See *Hydrostatics.*)

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 higher the temperature. When a 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 this 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 favorable to chemical combination than either the solid or elastic state. In the solid state, the cohesive attraction prevents the parts 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 descent below or rise above 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.

Fluor, or Fluor-Spar. The crystals and crystalline 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 cubo-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; color, white, though not very common, and seldom pure; more generally wine-yellow or violet-blue. Among its brightest colors are emerald and pistachio-green, sky-blue, rose-red and crimson-red. Very dark blue colors, bordering on black, and probably owing to foreign admixtures, sometimes occur. Sometimes different shades of colors 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 arragonite, 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 curved, lamellar composition. The composition 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 color, 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 afford bright green colors. In consequence, they have received the name of *chlorophane*, or *pyro-smaragdus.* A variety of this latter kind, from Ecaterineburg, 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 disengaged in a gaseous state, and corrodes glass. Several varieties, particularly the sky-blue and rose-colored ones, lose their color 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 schist and secondary limestone, accompanied by galena-blende, calcareous and pearl spars, heavy spar, quartz, bitumen and clay, as at several places in Cumberland and Durham, of the same country. It also frequents primitive rocks, accompanying tin-ore, mica, apatite and quartz, as at Zinwald, in Bohemia. The most remarkable deposit of fluor in the U. States, hitherto discovered, is along the country south-west from Cave rock, on the Ohio, for 30 miles, in Gallatin county, Illinois, where it exists in an alluvial situation, or in veins traversing a compact limestone. Its crystals are often large, and various in their colors; the prevailing tint, however, is a dark purple, approaching black, which is owing to the interfusion of bituminous matter, as is apparent from the odor when the crystals are broken. The chlorophane variety exists very plentifully at New Stratford, Connecticut. The uses of fluor are numerous and important. It is employed as a flux in the reduction of various ores, from which circumstance the name *fluor* has been derived. The fluoric acid, disengaged from it by means of sulphuric acid, is used for corroding and etching upon glass. Formerly the finest specimens were cut and worn as gems; but their inferiority in point of hardness, being considerably below that of the artificial gems, has brought them into disuse. It still continues, however, when obtainable in masses of sufficient dimensions, to be wrought into various extremely ornamental objects, such as vases, basins, obelisks, &c. This manufacture is confined to Derbyshire (England), no other part of the world affording fluor sufficiently firm and tenacious for the purpose, and which is, at the same time, possessed of fine colors. The work is performed on a lathe turned by water, the foot-lathe being much more liable to produce fractures in the piece worked, by its want of steadiness. The tool employed, at first, is a piece of the best steel; after which a coarse stone is applied, with water, so long as the smoothness is improved by these means; then the finer gritstone, pumice, &c.; till, finally, the article becomes sufficiently smooth to receive emery, with which the operation is completed. The crevices which frequently occur in the masses of fluor, are sometimes concealed by the introduction of galena; and, as this substance is often naturally found with the fluor, it becomes difficult to detect the fraud. In selling the articles, also, it is a frequent practice to moisten them with water, under the pretence of removing dust, which is done to bring out the colors otherwise invisible, and which, of course, disappear as soon as the objects become thoroughly dry.

Fluoric Acid is prepared by mixing pure fluor-spar, in coarse powder, with twice its weight of sulphuric acid, in a leaden or silver retort, and applying heat. The acid distils over in vapor, and must be collected in a receiver of the same metal, surrounded by ice. At the temperature of 32° Fahrenheit, fluoric acid is a colorless fluid, and remains in that state at 59°, if preserved in well stopped bottles; but, when exposed to the air, it flies off in dense white fumes, which consist of the acid in combination with the moisture of the atmosphere. Its specific gravity is 1.0609; but its density may be increased, by gradual additions of water, to 1.25. Its affinity for water is far greater than that of the strongest sulphuric acid. When a drop of it falls into water, a hissing noise is heard, similar to what is occasioned by plunging a red-hot iron into that liquid. Its odor is extremely penetrating, and its vapor dangerous to inspire. When applied to the skin, it instantly disorganizes it, and produces the most painful wounds. It acts energetically on glass; the transparency of the glass is instantly destroyed, caloric is evolved, and the acid boils, and, in a short time, disappears entirely, a colorless gas being the sole product. This gas has received the name of *fluo-silicic acid*, because it is regarded as a compound of fluoric acid and silica. A better mode of procuring it, however, is to mix fluor-spar with pounded 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 48 times denser than hydrogen. When brought into contact with water, it is instantly absorbed, depositing its silica 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 parts 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 advantage over copper, that the impressions do 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 fluate of potash; the explanation of which, given upon this view, was, that the hydrogen arises 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 ammoniacal gas, a dry fluate 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 fluate of potash is a compound of fluorine and potassium. The phenomena are explained with the same ease by either theory, although the arguments upon which they depend are thought, by the majority of chemists, to preponderate in favor of the view proposed by sir Humphrey Davy. Fluoric acid forms salts by uniting with several bases. Five fluates have hitherto been found native; viz., the fluate of lime, or fluor-spar, the fluo-silicate of alumine, or topaz, the fluate of cerium, the double fluate of cerium and yttria, and the double fluate 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, forming a fluate and a bifluate, 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 fluate 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 212° Fahrenheit, dissolve only 4.3 of it. Neutral fluate 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 fluate of soda, in a crucible of platinum, with its lid turned upwards. The earthy fluates 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 fluates of fixed bases are fusible at a high temperature, and are not decomposed by heat and combustible matter; nor does any acid, excepting the boracic, 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 fluor-spar be mixed with dry vitreous boracic acid, and distilled in a glass vessel with sulphuric acid, the proportions being 1 part boracic acid, 2 fluor-spar and 12 sulphuric acid, the gaseous substance formed is of a different kind, and is called *fluo-boric acid*. Its density to that of air is as 2.371 to 1.000. It is colorless. Its smell is pungent. It cannot be breathed without suffocation. It extinguishes combustion, and reddens vegetable blues. It has no action on glass, but a very power-

ful 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 watery vapor, 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, it inflames, and a chocolate-colored solid, wholly devoid of metallic lustre, is the sole product. On putting this substance into water, a part of it dissolves, and a solution of fluate of potash is obtained, the insoluble matter being boron. Accordingly, fluo-boric acid gas is inferred to be a compound of fluoric and boracic acids. It unites with ammoniacal 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 (*Vliessingen*), a well fortified city on the south side of the island of Walcheren, belonging to the province of Zeeland, in the kingdom of the Netherlands, lies at the mouth of the Western Scheldt, and is connected with Middelburg 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 harbor, which is capable of containing 80 men-of-war. 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 standard of revolt from Spain was raised. It has a brisk commerce with the East Indies. Lat. 51° 26′ 42″ N.; lon. 3° 34′ 57″ E.

Flute; a portable, inflatile instrument, blown with the breath, and consisting of a tube of box or ivory, furnished with holes at the side for the purpose of varying its sounds. Its name is derived from the word *fluta*, 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 *Tibiæ*.)

Flute, Common; a wind instrument, consisting of a tube about 18 inches in length, and 1 inch in diameter, with 8 holes disposed along the side, by the stopping and opening of which, with the fingers, the sounds are varied and regulated. This instrument was formerly called the *flûte à bec*, from the word *bec*, 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 d'Allemand; a German flute. (See *Flute, German.*)

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, with holes disposed along the side, like those of the common flute. It is stopped at the upper end, and furnished with movable brass or silver keys, which, by opening and closing certain holes, serve to temper the tones to the various flats 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. Fluting the shafts of columns is a practice never omitted in any great and finished Grecian 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 obviate an inconsistent plainness 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 philosophical experiments, consist usually of alkalies, 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 detonation 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 detonation 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 proportion 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 color 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-colored 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 removal of nuisances, which they effect gradually by their numbers. The flesh-fly deposits its eggs upon animal matter in a state of incipient putrefaction. The *larvæ* 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. The small flies, which are so annoying to 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 the poisonous quality of this remedy makes it too dangerous to be carelessly exposed.

Fly is a name given to a certain appendage to many machines, either as a regulator of their motions, 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 coining 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 form the genus *muscicapa* of Brisson and Linnæus, with the exception of some of the larger species, known by the name of *tyrants*, which the latter placed in his genus *lanius*. In this, he was followed by Gmelin and Latham, who augmented the genus by adding many species. Lacepède divided them into three genera, according to the size of the birds, calling the largest *tyranni*; the next, *muscivoræ*; and the smallest, *muscicapæ*. Cuvier, in his last edition, forms three subgenera, under the names of *tyrannus*, *muscipeta* and *muscicapa*, though he also admits several genera and subgenera, as appertaining to this class. Temminck divides this great genus into two, *muscipeta*, nearly resembling Cuvier's sub-genus of the same name, and *muscicapa*. The prince of Musignano adopts the genus *muscicapa*, dividing it into larger species,

including the *tyranni* of authors, and smaller species, the *muscicapæ*, *muscivoræ* and *muscipetæ* 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 ills 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. We have ten species inhabiting the U. States; the other species, included by Wilson under the name of *muscicapa*, belonging to *vireo* and *sylvia*. These are, *M. tyrannus*, well known under the common name of *king bird*; *M. crinita*, great crested fly-catcher; *M. verticalis*, Arkansas fly-catcher; *M. savana*, fork-tailed fly-catcher; *M. forficata*, swallow-tailed fly-catcher; *M. saya*, Say's fly-catcher; *M. fusca*, pewit; *M. virens*, wood pewit; *M. acadica*, small, green, crested fly-catcher; *M. ruticilla*, American redstart.

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, by which they are sustained or wafted along. 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 his 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 protruded. 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 sustain itself for several seconds in the air. In tropical seas, the flying-fish rise from the water in flocks, or, more properly, shoals, of many thousand at a time, when disturbed by the passing of a ship, or pursued by their inveterate foes, the dolphin and albicore. 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 flights 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 the superior lobe of the caudal fin shorter; 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 13 inches, and are commonly found about eight. The flesh is pleasant, and much resembles that of the fresh water gudgeon. 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 volitans*, or common flying-fish of the Atlantic, bears some resemblance to the *E. exiliens*, which is found in the Mediterranean, 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 gulf 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 words of Confucius—"In the West shall be found the holy one"—and sent two grandees of the empire, Tsay 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. According to the traditions of his followers, Fo 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, spoke 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 17th year, he married three wives, and became the father of a son; but, in his 19th year, he left his family, and went with four wise men into the wilderness. At the age of 30, 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, *Lamas;* in Siam, *Talapoins;* and in Europe, *Bonzes.* In the 79th 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 language, but that now, being about 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 there 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 endeavored to bring into harmony. The *exoteric* doctrine of Fo contains his system of morality. It distinguishes between good and evil; he who has done good during his life will be rewarded after death; and he who has done evil will be punished. There are distinct places for these two sorts of souls, and to each a station is assigned according to its deserts. The god Fo was 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 which they may deliver others from 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 first human beings sprung from nothing, and have returned to nothing. The void constitutes our being. All that exists sprung from nothing, and the mixture of the elements, and all must return whence it 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 subtile and simple, and, because it is simple, the perfection of all other beings. It is perfect, and therefore exists in an uninterrupted quiet, 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 endeavor 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 Klaproth, his precept was, "Endeavor 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 noth-

ing. All, however, believe in the transmigration of souls, and that, when a soul first appears on earth, and animates a human body, it inhabits the body of a Bramin. 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 *Samanæans*, and finally appears in the body of a perfect *Samanæan*, 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 dies only to return into the Deity, from whom his soul had emanated. This Supreme Being, the essence of all things, is eternal, invisible, incomprehensible, almighty, merciful, just, beneficent, and originated from itself. It cannot be represented by any image, neither can it be worshipped, because it is elevated above all worship; but its attributes may be represented, 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 rank and profession, has its particular genius. These gods of fire, water, soldiers, &c., 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, in undisturbed 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 *Samanæan*, 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 reunion. The *Lingam* (see *Indian Mythology*) is the symbol of this first act of the Deity, by which Brama, 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 denominated, 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 is not, 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 2200½ weight, as of lead; but in London it is 2000.

Foe, Daniel. (See *Defoe.*)

Fœtus, 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 vapor is intimately united with the atmospheric air, which holds it in solution. This portion of aqueous matter is invisible, and exists in the greatest quantity in very warm and 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 vapor 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 vapors, 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 hot weather, the air is not so easily 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 they are quickly dispersed by the winds. There is another atmospherical phenomenon, which has been called *dry fogs*. 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, a similar fog overspread the Tyrol and Switzerland. It appeared to be composed of earthy 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 thin leaf of metal, placed under transparent substances, such as precious stones, for the sake of improving their color, and heightening their lustre, the light, which passes through the transparent body, being reflected by the metal. Figuratively, any thing 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 back 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*.)

Folard, chevalier Charles de, a tactician, born at Avignon in 1669, entered the military service at the age of 16 years, and served with the rank of under-lieutenant in a partisan corps of the regiment Berry, in 1688. This service was a good school of war. In the campaign of 1701, he found new opportunities of displaying his military science. Folard served in many campaigns. In the battle at Cassano, in 1705, 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 Partisan*. Folard died at Avignon in 1752.

Foligno (anciently *Fulginium*); 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 fortifications have been converted into public walks. Foligno is celebrated for its confectionary. 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-sänger*; by no means to be confounded with *minnesänger*), of whom he was a member in the second half of the 15th century. He was one of the first who introduced dramatic literature into Germany, by giving the diversions of the carnival a better form. There are still existing four of his compositions for such occasions, *Solomon und Marcolf*, *Ein Bauerngericht*, *Eine gar bäurische Bauernheirath*, *Der Arzt und der Kranke*. Folz took an active part in the reformation, and in the introduction of the newly invented art of printing.

Fomentation, in medicine, 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 15 minutes, or half an hour, as occasion may require.

Fondi, or Fundi, a town of Naples, in Lavora, situated near a lake to which it gives name; 40 miles W. Capua, 56 E. Rome; lon. 13° 30′ E.; lat. 41° 20′ N.; population, 4937; bishop's see. This was anciently a municipal town, and afterwards a præfectura: it stood on the Appian Way. At the extremity of the town is an old castle, of no great strength. Fondi stands in a plain, surrounded on one side with hills, whence it looks like an amphitheatre. 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 *Amyclanus*) lies between the road and the sea, and is a fine expanse of water.

Fonseca, Eleanor, 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 the improvement of her personal charms. She attended particularly to the study 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 1799, 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 anti-royalists; and madame de Fonseca was in the zenith of her fame, when the measures of cardinal Ruffo 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, 1799.

Fontaine, Jean de la, one of the most original men of genius of the age of Louis XIV, was born at Château-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 19, he placed himself under the fathers of the oratory, with whom he remained, however, only 18 months. He appears not to have attempted poetry until his 22d 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 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 his best friend, madame Sablière, took him 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 candor 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," said he, calmly, "I am very glad of it." La Fontaine, probably on account of this very simplicity, was no favorite 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 Sablière, in whose house he lived 20 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 accede: 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, however, very docile, and not only induced 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 hymns, but did not succeed in this new species of composition. He died at Paris, in 1695, at the age of 74; and, when he was undressed for interment, a hair-cloth 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 the writer to his task; and his reflections form perfect specimens 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 cutting remarks. In common life, La Fontaine was simple almost to stupidity. According to D'Alembert, "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 most pains to reproduce." It must be remarked as a striking proof of La Fontaine's originality, that the branch of literature in which he was so distinguished, was one wholly opposed to the artificial character of his time. As Dante wrote one of the greatest epics on a subject having apparently nothing epic in its character, so La Fontaine wrote fables of the most characteristic simplicity at a time when the freedom of nature seemed almost entirely lost. Both the Tales and the Fables of La Fontaine have been superbly printed. Of the former (the license of which keeps them out of many libraries), the best edition is that of Paris, 1762, with Eisen's designs and vignettes, by Choffat. Of his Fables, innumerable editions have been printed; but the most magnificent is that in 4 vols. folio, 1755—1759, in which each fable is adorned with a plate, executed with zoological precision. Of the small editions, one by Costi is much esteemed. La Fontaine is also the author of *Les Amours de Psyche*, a romance; *Le Florentin* and *L'Eunuque*, comedies; *Anacreontiques*, &c.; all of which are printed in the *Œuvres Diverses*, Paris, 1758, 4 vols. 12mo.

Fontainebleau; a town of 7420 inhabitants in the department of the Seine and Marne, with a military academy; 13 leagues S. S. E. from Paris. The palace, situated in the midst of a forest, consists of four buildings, of which Francis I laid the foundation, and which Henry IV, Louis XIV and Louis XV completed. It was here that Christina, queen of Sweden, caused her equerry, count Monaldeschi, to be executed, in 1654; and here, also, Montespan and Du Barry lavished the treasures of the richest and most beautiful country in Europe. The preliminaries of peace between France, England, Spain and Portugal were signed in the palace of Fontainebleau, Nov. 5, 1762, and, on the 20th, the ratifications were exchanged there. There, also, pope Pius VII lived with his cardinals from June 19, 1812, to January 24, 1814; and there the emperor Napoleon signed his first abdication, April 11, 1814. (For an account of the works of art with which Fontainebleau is adorned by Primaticcio, &c., see *Description Historique de Fontainebleau par l'Abbé Guilbert* (Paris, 1731, 2 vols.). The wood of Fontainebleau, formerly called *forêt de Bièvre*, covers 41,000 acres, and contains a great quantity of game, which furnishes sport, in autumn, to the sovereigns of France. There is also much cultivated land within the precincts of this wood, the produce of which contributes to the support of Paris.

Fontana, Domenico; an architect of the 16th century, born at Mili, a village on the lake of Como, in 1543. He pursued the study of geometry in his youth, and, at the age of 20, went to Rome, where he studied the remains of ancient and the masterpieces of modern art. Cardinal Montalto (afterwards pope Sixtus V) engaged him in his service as an architect, and employed him to construct a chapel in the church of St. Maria-Maggiore, and a palace in the garden of the same church. Montalto, like other Italian prelates and princes, was ambitious of attaching his

name to some imposing works, and directed Fontana to spare no expense. But the pecuniary resources of the cardinal failed, and the undertaking would have been interrupted, had not Fontana himself supplied the means for continuing the work. Montalto was not unmindful of this liberality; being soon after raised to the papal chair, he confirmed Fontana in his office of architect, and employed him in building another palace near the baths of Diocletian. Sixtus V wished to remove the great obelisk, now in front of St. Peter's church, which was 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 erected 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 honor 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 also constructed several 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 1592, 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 harbor 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 Cæsar. We have but one literary work by Domenico Fontana (Rome, 1590, with 19 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, born at Pomarolo, not far from Roveredo, in the Italian Tyrol, in 1730; began 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 ornaments of Florence. This collection contains an immense number of anatomical preparations, in colored 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 colors by keeping, were represented in colored wax, from nature, under his direction. Fontana is the author of several works on scientific subjects, some of which have been translated into German and French. He also made several discoveries relative to the application of carbonic acid, and different sorts of gas. His writings show him to have been an ingenious and indefatigable observer. The political principles which he avowed during the events of 1799 in Tuscany, involved him in some difficulties. He died in 1805, and was buried in the church of Santa Croce, by the side of Galileo and Viviani.

Fontanes, Louis, marquis de; a distinguished member of the French institute, born of a noble family, at Niort, in 1757. In the commencement of the French revolution, he edited a journal, entitled the *Modérateur*, and, after the fall of 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 Châteaubriand, in company with whom he returned to his native country, taking advantage of the amnesty granted on the elevation of Bonaparte to the consulship, and joined MM. Ronald and La Harpe in conducting the *Mercure de France*. Shortly after, he obtained a seat in the *corps législatif*, of which body he eventu-

ally became the president. In 1808, he was appointed grand-master of the university 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 favor 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 reëstablishment of that body. In 1817, he was one of the supporters of the election law introduced by Decaze, but afterwards changed his opinion, and voted for its repeal. M. de Fontanes died at Paris, March 17, 1821.

FONTANGES, duchess of, born 1661, was descended from an ancient family of Rouergue, and was lady of honor to the queen mother. As beautiful as an angel, says the abbé Choisy, but as silly as she was beautiful, she nevertheless captivated the affections of Louis XIV, who was tired of the pride and the caprice of madame de Montespan. As soon as she discovered the passion which she had inspired, and had secured her royal conquest, she became haughty and extravagant, spending a hundred thousand crowns a month, and retorting a hundred fold the disdain she had experienced from madame de Montespan. She became the general dispenser of the king's favors, and the model of fashion. One day, when she was on a hunting party, the wind having put her head-dress in disorder, she fastened it with a riband, the knot of which falling over her forehead, this fashion spread over all Europe, under her name. The king made her a duchess, but she did not long enjoy the rank, as she died when scarcely 20 years old, in the abbey of Portroyal, Paris, shortly after an accouchement.

FONTENAY; a village in Burgundy, department of the Yonne, where a bloody battle was fought 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 Bovier 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 13, entered the class of rhetoric. After completing his studies, he was admitted an advocate, conducted a cause, which he lost, and renounced the bar forever. 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 20, he had assisted in the composition of the operas of Psyche and Bellerophon, 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 personal feeling, 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 opponents 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 the severe sciences in a light way. In 1683 appeared his Dialogues of the Dead, which were favorably 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 obsolete, in consequence of the advancement of science. Fontenelle distinguished himself as secretary of the academy of sciences, by his *Éloges*, 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 deserved it, not less on account of his wisdom and purity of life, than of the elegance and grace of his writings. Rivernois 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 every thing with every body."

FONTENOY; a village in the Netherlands, province of Hainault, celebrated for the battle of May 11, 1745, in which the French, under marshal Saxe, defeated the English, Austrian and Dutch allied forces. It contains 500 inhabitants.

FONTEVRAULT, or FONTEVRAUD, a valley on the borders of Poitou and Anjou, in the department of Mayenne and Loire, was chosen, in 1099, 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 Fontevrault* from this circumstance. Robert gave his followers of both sexes the rule of St. Benedict, and a very singular constitution, which made the nuns the 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 57 monasteries in France before the revolution, when it was suppressed.

FONTINALIA; a Roman festival, celebrated in honor of the nymphs of the fountains, during which the fountains were adorned with flowers. Flowers were also thrown into them.

FOOD, COMPARATIVE NUTRITIVE PROPERTIES OF. An interesting report on this subject has lately been presented to the French minister of the interior, by Messrs. Percy and Vauquelin, members of the institute. The result of their experiments is as follows: In bread, every 100 lbs. is found to contain 80 lbs. of nutritious matter; butcher meat, averaging the different sorts, contains only 35 lbs. in 100; French beans (in the grain), 92 lbs. in 100; broad beans, 89 lbs.; peas, 93 lbs.; lentils (a species of half pea, little known in Britain), 94 lbs. in 100; greens and turnips, which are the most aqueous of all vegetables used in culinary purposes, furnish only 8 lbs. of solid nutritious substance in 100; carrots (from whence an inferior kind of sugar is produced), 14 lbs.; and what is remarkable, as being opposed to the old theory, 100 lbs. of potatoes only yield 25 lbs. of nutriment; 1 lb. of good bread is equal to 2½ lbs. of potatoes; and 75 lbs. of bread and 30 lbs. of meat are equal to 300 of potatoes; ½ lb. of bread and 5 oz. of meat are equal to 3 lbs. of potatoes; 1 lb. of potatoes is equal to 4 lbs. of cabbage, and 3 lbs. of turnips; and 1 lb. of rice bread or French beans is equal to 3 lbs. of potatoes. (See *Aliment*, placed by mistake after *All Souls*, vol. 1, p. 177.)

FOOL. (See *Jester*.)

FOOLAHS. (See *Foulahs*.)

FOOLS, FEAST OF. Festivals, under this name, were regularly celebrated, from the 5th to the 16th 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 *Saturnalia*, 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 *Saturnalia*, 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 kinds of masks and disguises, engaged in indecent songs and dances, and practised all possible follies in the church.* The order of cere-

*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. Latin psalms were often turned into merry songs, sung by the canons, monks, &c., after dinner or supper. Several Latin songs, still in existence

monies, 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 city of Sens, the priests played at dice upon the altar, whilst the bishop of fools read mass; and they threw stinking incense into the holy censer. 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 16th 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 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 some quibble or stroke of humor is often interspersed in the dramas of Shakspeare, in the midst of the most tragic scenes. Burlesque or indecent figures were even not unfrequently drawn in the work of the large initial letters of the prayers in the breviaries 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 12 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 cube contains 1728 cubic inches. (See *Measures.*)

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 28, of which some are simple, as consisting of two or three syllables, and therefore called *dissyllabic* 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, Teembo and Laby.

Foota Torra; a country in Africa, between the Senegal 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 untrodden 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 Diversions 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 his Friends. The Auction of Pictures, a similar device, proved equally successful; and thus, having discovered where his strength lay, he wrote several two-act farces, which appeared from 1751 to 1757, under the titles of Taste, the Englishman in Paris, the Knights, the Englishman returned from Paris, and the Author. From 1752 to 1761, he continued to perform 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

among the German students, originated from the convents, though they are now much changed. The favorite *Gaudeamus igitur* of the German students was originally a psalm. Some other customs of the German students call to mind 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.

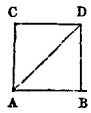
Minor, at the Haymarket, with such a company as he could hastily get together. Henceforward he pursued the scheme of constantly occupying the Haymarket theatre when the others were shut up, and, from 1762 to the season before his death, he regularly performed there. In 1763, he brought out his Mayor of Garrat, which was succeeded by the Patron and the Commissary, 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 rendered necessary. He soon, however, recovered his health and spirits, and even improved the incident to the suggestion of characters for his own acting. This accident also proved of service to his fortune, as it induced the duke of York to procure for 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 exerted her influence with the lord chamberlain, and Foote was 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 comica* in a superlative degree, and there is a force and a nature in some of his comic delineations, which would not have discredited Moliere. With the exception of the Mayor of Garrat, none of his pieces, 20 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.

Forbin, Louis Nicholas Philip Augustus, count of, lieutenant-general, and director-general of the collections of art in France, was born 1779, at La Roque, in the department of the Mouths of the Rhone. His father and uncle were killed before his eyes at the siege of Lyons, and he took refuge in the house of M. Boissieu, a draftsman, to whom he owed his first instruction in drawing. At a later period, being obliged to march with the national guard against Nice and Toulon, he concluded, at the latter place, a friendship with the painter Granet, which lasted the rest of his life. At the close of the campaign, he went to Paris, and studied under David with the greatest zeal, until he had become of age for the military service, when he was once more obliged to take leave of his art. He then served in the cavalry, under general Sebastiani, who enabled him to occupy himself with his art. After some time, he obtained a dismissal, and went to Italy. On the coronation of Napoleon, he returned to Paris, and was made chamberlain to the princess Pauline of Borghese, sister to the emperor. He afterwards entered the army again, and served in Germany, Portugal and Spain, but resigned his commission, after the peace of Vienna, and went to Italy. In 1814, he returned to Paris, and was made a member of the institute and director-general of the royal museums. In 1817, he visited Greece, Syria and Egypt, of which he published an account, accompanied with many fine engravings. In 1821, he was made inspector-general of all works of the fine arts, monuments, &c., in the departments. The new arrangement of the museum, which consists of one gallery and 20 large rooms, is his work. To him was also owing the institution of the national museum (consisting of works of French artists), in the palace of Luxemburg, and the museum at Versailles. His journey to Sicily increased his collection of drawings, which Osterwald published under the title Reminiscences of Sicily. Among his finest pictures are Ines de Castro, the Death of Pliny, Gonsalvo of Cordova, an Arabian suffering with the Plague. In his youth, he wrote some pieces for the theatre, and a romance.

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. Under 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 the figure below.*) 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, solicitatio, conatus movendi,* 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 motion; 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; or to surmount the largest dead 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 motrix,* 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 the parallelogram A B 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. 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 vigor 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 labor 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 labor 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 day. But our civil engineers have gone much farther, and are accustomed, in their calculations, to assume,



that a laborer will lift 10 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 from the produce of momentary exertions, under the most favorable 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 labor. A man will climb a stair, from 70 to 100 feet high, at the rate of 45 feet in a minute. Reckoning his weight at 155 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. A person may clamber up a rock 500 feet high, by a ladder-stair, in 20 minutes, and, consequently, at the rate of 25 ft. 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 action is still more remarkably diminished. A porter, weighing 140 lbs., was found willing to climb a stair 40 feet high 266 times in a day; but he could carry up only 66 loads of fire-wood, 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 808,000. The quantity of permanent effect was hence only about 700,000, or scarcely half the labor exerted in mere climbing. In the driving of piles, a load of 42 lbs., called the *ram*, is drawn up 3½ feet high 20 times in a minute; but the work has been considered so fatiguing as to endure only three hours a day. This gives about 530,000 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 36 lbs. 120 times in a day, from a depth of 120 feet, the total effect being 518,400. A skilful laborer, working in a field with a large hoe, 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 30 miles on a smooth and level road. But he would, in the same time, carry 130 lbs. only to the fourth part of that distance, or 7½ miles. Assuming his own weight to be 140 lbs., the quantity of horizontal action would amount to 42,768,000, or 28 times the vertical performance; but the share of it in conveying the load is 20,961,780, or about 30 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 English labor, 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 robust health, and the comfortable duration 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 labor performed by porters in Turkey, the Levant, and generally on the shores of the Mediterranean. 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 hods passing over their heads, and resting on their shoulders, with the ends of poles, from which the goods are suspended. According to some experiments of the late Mr. Buchanan, the exertions of a 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 men differ materially in strength, but still greater 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 civilized society, is a robuster and more vigorous animal than the savage. In the temperate climates, likewise, men are capable of

much harder labor 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 labor is performed in Peru, by the carriers, or *carguc-ros*, who traverse the loftiest mountains, and clamber along the sides of the most tremendous precipices, with travellers seated on chairs strapped to their backs. In this manner, they convey loads of 12, 14, or even 18 stone; and possess such strength and action, as to be able to pursue their painful task 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 constant though moderate labor. When a man stands, he pulls with the greatest effect; but his power of traction is much enfeebled by the labor 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 $\frac{1}{5}(12-2v)^2$. Thus, when at rest, he pulls with a force of about 29 lbs. avoirdupois; but if he walks at the rate of two miles an hour, his power of traction is reduced to 14 lbs.; and if he quicken his pace to four miles an hour, he can draw only 3 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 takes place when he 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 2430; but if he applied his entire strength, without moving from the spot, he could produce an effect of 3675. The labor 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 as 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 $(12-v)^2$, where v denotes the velocity in miles an hour, will perhaps be found sufficiently near the truth. Thus a horse, beginning his pull with the force of 144 lbs., would draw 100 lbs. at a walk of two miles an hour, but only 64 lbs. when advancing at double that rate, and not more than 36 lbs. if he quickened his pace to six miles an hour. His greatest performance would hence be made with the velocity of four miles an hour. The accumulated effort in a minute will then amount to 22,528. The measure generally adopted for computing the power of steam engines is much higher, the labor of a horse being reckoned sufficient to raise, every minute, to the elevation of one foot, the weight of 32,000 lbs. But this estimate is not only 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 15 times greater than the power exerted. The carriers between Glasgow and Edinburgh transport, in a single-horse cart, weighing about 7 cwt., the load of a ton, and travel at the rate of 22 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 14 to 22 miles a day, with two-wheeled carts, weighing each 11 cwt., and loaded with 79 cwt., or nearly 4 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 nearly as much work as those in the single-horse carts used at Glasgow, and far greater than those heavy animals which drag the lumpish and towering English wagons. The London dray-horses, in the mere act of ascending from the wharfs, display a powerful effort, but they afterwards make little exertion, their force being mostly expended 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 labors 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 favorite 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. In this country, an ass will carry about two hundred weight of coals or lime-stone twenty 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 burden and draught. In the hotter parts 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 proportionally 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 perform, in that time, a journey of one hundred 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 in 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 browze on the coarsest 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, they will run fifty or sixty miles on a stretch, and sometimes perform a journey of a 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 Peruvians. 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 labor 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 labor. They are made to tread in a wheel which draws water, or raises ore from the mine. Though a very light 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 Feltre, 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 Facciolato. Forcellini made rapid progress in the ancient languages, and assisted Facciolato in his new and greatly augmented edition of Calepin'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 Ceneda, in the Trevisan. But, having been recalled to Padua in 1731, and having obtained, through the patronage of the bishop of that city, cardinal Rezzonico, sufficient leisure to prosecute his task, he finished it under the direction of Facciolato. It was published under the title *Ægidii Forcellini totius Latinitatis Lexicon*, &c. (Padua, 1771, 4 vols. folio)—a monument of erudition and accurate knowledge of the Latin tongue. Forcellini died in 1768. (See *Facciolato*.)

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 with arms or menaces, and without authority of law, whereby he who has the right of entry is kept out of possession. By the ancient common law, he who had the right of entry into lands, might make entry by force; but, this liberty being abused, a statute was passed in the time of Richard II, and subsequently other statutes, subjecting a party who should make forcible entry into lands to indictment, and provision has also been made for a summary process to be issued by two justices of the peace for the purpose of restoring the party thus forcibly expelled, or kept out of his lands, to the possession. Similar statutes have been passed in the U. States; so that the general rule is, that a person cannot get possession of lands, even if he has a right of entry, where another person is in peaceable possession, and ready to resist the owner, except by a judgment of law. In other words, a man must apply to the courts for redress, and not undertake to right himself by violence.

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 Memoriall*, a species of monody on the earl of Devonshire, 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, Hatherewaye and others. The date of his death is uncertain; but it is thought that he did not long survive 1639. As a dramatic writer, he is often elegant and elevated, and uniformly easy and harmonious. His genius was most inclined to tragedy, and he was too fond of an accumulation of terrific incidents, which overlays 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 Immortalitie of a vertuous Name (1620, 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 fore-sail. (See *Bow-Line.*)

Fore Braces; ropes applied to the fore yard-arms, to change the position of the fore-sail 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 breast-work, 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, and excluded 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 fore-mast, 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, in oblique positions. 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 endeavors to enhance the price of merchandise, and all practices which have a tendency thereto, whether by spreading false rumors, 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 careful investigation of the subject of the management of forests, and every thing 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 Ilsenburg, in Stolberg-Werningerode, near the Hartz 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. There are a number of forest academies in different parts of Germany, particularly in the small states of Central Germany, in the Hartz, Thuringia, &c. The principal branches taught in them are the following; forest botany, mineralogy, zoology, chemistry; by which the learner is taught the natural history of forests, and the mutual relations, &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 raising 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 her forests, and has enacted a *code forestier*.—The English forest laws have reference only to the preservation of game.—"With regard (says Blackstone, *Com.*, vol. 2, page 413) 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 vanquished country, and to part it out among his soldiers or feudatories, who were to render him military service for such 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 proscribing the use of snares, 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 rigor. In France, all game is [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 England, 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 diversion, on pain of a pecuniary forfeiture on the part of such as interfered with their sovereign. 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 exerted with the utmost rigor at and after the time of the Norman establishment, not only in the ancient forests, but in the new ones which the Conqueror made by laying together vast tracts of country depopulated for that purpose, and reserved solely for the king's royal diversion; in which were exercised the most horrid tyrannies and oppressions, under color 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: '*capturam avium per totam Angliam 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 rigors, and the other exactions introduced by the Norman family; and, accordingly, we find the immunities of *carta de foresta* 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; particularly, killing the king's deer was made 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, honor, 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 reversion may enter upon possession. In *criminal* cases, it is two-fold; 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), to the crown for a year and a day, &c. 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 nozzle of which is inserted through a wall or parapet constructed for that purpose. Black lead 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.

Forget-me-not (*myosotis palustris*) is a small 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 *boragineæ*. The brilliancy of the flowers renders them conspicuous, notwithstanding their diminutive size; and it is considered the emblem of friendship among most of the nations of Europe, probably owing to its clear blue, the color of fidelity. This little flower plays a conspicuous part in albums.

Fork. Forks are first mentioned in an inventory of a prince's plate, in 1379. Before this period, the knife only was used for the purpose of cutting up 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 Asiatics, even to this day, use no forks, as is also the case with the Turks. The Chinese, instead of forks, make use of two small sticks, which they hold in the same hand between different fingers. (See *Cutlery*.)

Forli (anciently *Forum Livii*); a town in Italy, in the States of the Church, capital of a delegation; 14 miles S. S. W. Ravenna, 33 S. E. Bologna; lon. 12° 1′ E.; lat. 44° 13′ N.; population, 12,960. It is a bishop's see. It contains a cathedral, 9 churches, 23 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 tolerably good; 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 counterscarp, 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 meant 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 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 marl, 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 an assemblage of this kind, having a common oolitic character, from the lias to the Portland oolite inclusive, notwithstanding the important deposits of Kimmeridge clay, Oxford clay, &c. &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 mill-stone 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, or the deposits of the carboniferous limestones of North America,—forming probably a floor from the Arkansas to Port Bowen, including the calcareous rocks of New York, Pennsylvania, Ohio, &c. &c. &c. equivalent to the carboniferous limestones of the British isles,—we cannot but look to a contemporaneous 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 existed.

Formey, John Samuel, perpetual secretary of the academy of sciences at Berlin, was born in 1711, at Berlin, where he died March 7, 1797. He distinguished himself by numerous works in French and Latin. He at first applied himself to theology, but soon engaged in general studies. In 1740, he was appointed secretary and historiographer to the academy of Berlin, and, in 1748, perpetual secretary. Frederic the Great always manifested the highest esteem for him, although he was displeased with him for not taking the part of Voltaire in his philosophical controversies.

Formey, John Louis, son of the preceding, one of the most distinguished practical physicians of Germany, was born in 1766, at Berlin, and studied at Halle and Göttingen. He received the degree of doctor at Halle, and published a dissertation *De Vasorum absorbentium Indole.* He then studied at Paris, which he left at the beginning of the revolution. He was afterwards one of the highest physicians of the army, and a practising physician at Berlin. He was also body physician to the king of Prussia, and, in 1806, was invited to Paris to attend a medical consultation on the case of prince Louis, afterwards king of Holland. He died June 23, 1823. Among his works are the Medical Topography of Berlin; Medical Ephemerides; a new edition of Zückert's Instructions for the Treatment of Infants; On the Hydrocephalus of Children; Miscellaneous Medical Writings (1821); and a Treatise on the Pulse, written during his last illness (Berlin, 1823). His reputation as a practical physician was very great.

Formic Acid; thus named from having been discovered first in the expressed liquor of ants; at present it is procured from the application of a gentle heat to a mixture of tartaric acid, water and the protoxide of manganese. The tartaric acid is converted into water, carbonic acid and formic acid. This acid has a very sour taste, and continues liquid at very low temperatures. Its specific gravity is 1.1068 at 68° Fahr. According to Berzelius, the formiate of lead consists of 4.696 acid and 14 oxide of lead; and the ultimate constituents of the dry acid are hydrogen 2.84, carbon 32.40, oxygen 64.76.

Formica. (See *Ant.*)

Formosa; an island in the Chinese sea, separated from Fo-kien, in China, by a strait about 60 miles wide where narrowest. The island is about 240 miles in length from north to south, and 60 from east to west, in its broadest part; but greatly contracted at each extremity. That part of Formosa which the Chinese possess, presents extensive and fertile plains, watered by a great number of rivulets, that fall from the eastern mountains. Its air is pure and wholesome, and the earth produces, in abundance, corn, rice, and most other kinds of grain. Most of the Indian fruits are found here, such as oranges, bananas, pine-apples, guavas, cocoa-nuts; and part of those of Europe, particularly peaches, apricots, figs, grapes, chestnuts, pomegranates, water-melons, &c. Tobacco, sugar, pepper, camphor and cinnamon are also common. The capital of Formosa is Tai-ouan—a name which the Chinese give to the whole island. Between Formosa and the continent are a number of small islands, called *Pong-hou* by the Chinese, and *Piscadores* by the Europeans. They form a small archipelago; the principal 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 well covered with trees, but wants 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° 40′ N. It is four miles wide at its mouth, but has only 12 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 pleasant; but the air is unwholesome, and the musquitoes innumerable.

FORSKAL, Peter, a Swedish botanist, and pupil of Linnæus, was born in 1736, and studied at Göttingen, where he defended, in 1756, a thesis—*Dubia de Principiis Philosophiæ 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 Linnæus, he was selected, by Frederic 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 (q. v.), von Haven and Kramer, and collected plants in the environs 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. Niebuhr collected Forskäl's papers, which consisted merely of detached sheets, accompanied them with remarks, and published them under the title *Descriptiones Animalium, Avium, Amphibiorum, Piscium, Insectorum, quæ in Itinere Orientali observavit P. Forskæl* (Copenhagen, 1775, with an engraving). The systematic catalogue, in Latin, Greek and Arabic, is followed by about three hundred descriptions of animals, &c., arranged according to the Linnæan system, and also the *materia medica* of the principal apothecaries of Cairo. Besides this work were also published *Flora Ægyptiaco-Arabica*, &c. (ibid.); *Icones Rerum Naturalium, quas in Itinere Orientali depingi curavit Forskæl* (ibid., 1776, with 46 engravings, of which 20 represent plants and 23 animals). The drawings are by Brauernfeind, the painter of the expedition, who likewise died in the East. Linnæus called an exotic plant *Forskalea*, in honor of his pupil.

FORSTER, John Reinhold; born at Dirschau, Oct. 22, 1729; Prussian professor of natural history at Halle. 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 at Berlin. In 1748, he began to study theology at Halle; and, in 1751, he went to Dantzic, and obtained the place of preacher at Nassenhuben, or Nassenhof. He gave just so much attention to his office as necessity required, and entered with his whole soul into his favorite studies—mathematics, philosophy, history, geography, and the ancient languages. His passion for travelling was gratified by a commission to examine the state of the colony of Saratov, in Asiatic Russia, 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 Catharine 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 compensation. Here he supported himself and his son George partly by the sale of the curiosities, which he had collected in his travels, and partly by translations. He afterwards joined a dissenting academy at Warrington in Lancashire, as teacher of natural history and the French and German languages. He was finally invited to accompany captain Cook, in his second voyage of discovery, as naturalist of the expedition. He set out from London June 26, 1772, with his son, at that time 17 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 condition with the father that he should not print any account of this voyage. The father afterwards published 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 English government, and deprived 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, 18 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 penetration and quick apprehension with an astonishing memory. He spoke or wrote 17 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 on the Byssus of the Ancients. His style is strong and animated, though not perfectly pure.

FORSTER, John George Adam, son of the preceding, born November 26, 1754, at Nassenhuben, near Dantzic, accompanied his father, at the age of 11 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 with his father at Warrington, where he continued his studies, translated several works into English, and taught German and French in a school of the neighborhood. In company with his father (*see the preceding article*), 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 Berlin when the landgrave of Hesse 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 design of 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 revolutionary 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 thus 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 sunk under the repeated shocks of the last year, and died at Paris, 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. (*See the preceding article.*) 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 Kalidas.

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 fluency. Persic was familiar to him. In Sanscrit he had made some progress; and in that dialect of it spoken by the Mahrattas 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, Kashmire, 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 researches in that part of the world, when his death took place at Allahabad, in 1792.

FORT; a small fortified place, surrounded with a ditch, rampart and parapet, for the purpose of defending a pass, river, road, harbor, &c. Forts are made of different forms and extent, according to the exigencies of the case.

FORTE-PIANO. (See *Piano-Forte.*)

FORTEVENTURA, or FUERTE-VENTURA; one of the Canary islands, about 50 miles in length, and from 8 to 24 broad. The soil is, in general, fertile in corn, roots and fruits, and beautifully diversified with hills and valleys, well watered, and supplied with a variety of timber. The principal towns are La Villa, in the centre of the island, and Olivia, near the northern extremity; besides which there are on the east coast three sea-ports, called *Langla*, *Terrafata* and *Pozzo Negro*. There are also several villages. The climate of this island and of Lancerotta is exceedingly wholesome. Lat. 28° 4′ N.; lon. 14° 32′ W.; population, according to Minano, in 1826, 12,451.

FORTH; a river of Scotland, the largest in Great Britain. It rises on the north side of the mountain of Ben Lomond, and runs into the German ocean by a broad mouth, called the *frith of Forth*, about 20 miles below Edinburgh. The tide flows up a mile above Stirling bridge, between 70 and 80 miles from the ocean. Length, 200 miles.

FORTIFICATION; the science of strengthening positions in such a way, that they may be defended by a body of men much inferior in number to those by whom they are attacked. The works constructed for this purpose are also called *fortifications*. The nature of the works is different, according to the object for which they are intended, and the engines by which the attack will probably be made. Against an enemy without artillery, a simple wall would be sufficient, which a single battery might soon demolish. The first species of fortification was, of course, very simple, consisting merely of an earthen mound or of a fence of palisadoes. With the increase and improvement of engines of attack, the defensive works were likewise made stronger, and constructed with more art. A ditch was added to the wall; round or square towers were then introduced, placed at such intervals as to be capable of affording assistance to one another. This was the whole art of fortification practised by the ancients. Vegetius 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 broken line, with salient and reëntering parts. 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 time of the invention of bastions is not precisely ascertained. 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 French have carried the art to great perfection. 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 the 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 created insurmountable obstacles in the way 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 es-

sential 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 fortification. The science of fortification forms one of the most interesting and difficult of the military sciences. In modern times, it has undergone important changes, as, indeed, is the case 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 Coblentz. The most approved principles and discoveries of the most distinguished engineers are 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 an assault; 2. to form a plan which may easily be applicable to all positions, whether their situation is regular or not; 3. to accomplish as much as possible, at the smallest possible expense; 4. to construct the works so as not to require too many men for their defence. The systems of fortification, which have acquired the greatest reputation in Europe, are those of count Pagan, baron de Coehorn, von Scheiter and marshal Vauban. (See *Fortress.*)

Fortiguerra, Niccolo; born at Pistoia, 1674; a prelate at the court of pope Clement XI; one of the best Italian poets in the first half of the 18th century, uniting the peculiarities of Ariosto, Berni and Tassoni. In his epic poem *Ricciardetto*, so called from one of the Paladins of Charlemagne, he wished to show that it was easy to imitate Ariosto. He wrote the first canto of this poem in one night, and, at the request of his friends, continued the work. It extended to 30 cantos. He would not permit it to be printed before his death (February 17, 1735). It appeared (1738, in 2 vols. 8vo.) under the name of *Carteromaco*, which had been assumed by the author during his life. The invention appears almost entirely his own. He treats history so arbitrarily that he makes his hero ascend the imperial throne after the death of Charlemagne. Symmetrical unity is not a characteristic of this work. Its principal excellence consists in the description of situations. He breaks off the thread of his narration according to his humor, and resumes it again as capriciously as Ariosto. But his descriptions are more comic than those of Ariosto, and more satirical than those of Berni and Tassoni. His satire on the corruptions of the clergy is very keen, and was probably the reason that he was so unwilling to have the poem published. His short poems and sonnets are to be found in different collections of Italian poets.

Fortress; a place which nature and art have rendered fit to resist attack for a protracted period, and even against a superior force. Its object is to delay the enemy by compelling them to institute a siege. The works of a fortress are divided into the main-works, the out-works and particular defences. The main-works are situated immediately around the place, and consist of accurately contrived reëntering and salient angles, connected by straight lines. By this arrangement, all the parts of the fortress are made to afford each other mutual defence, and are enabled to bring a cross-fire to bear from various directions upon the ground in front, which is essential to the defence. The plan of these works must be determined by the localities; and they can therefore seldom be strictly regular. The work which immediately encircles the place is the wall or rampart. Occasionally a second, less elevated, low rampart, or *fausse braie*, runs parallel with this, or is appended to it. The projecting parts of the principal wall are called *bulwarks*, or *bastions* (see *Bulwark*, *Bastion*), (hence what are called *bastioned fortresses*, such as Marchi, Pagan, Freitag, Vauban, Coehorn, Carmontaigne, and others, were accustomed to construct); or, if the salient and reëntering angles are connected without the intervention of straight lines, *tenailles* (hence the denomination of fortifications *en tenaille*, such as Dillich, Landsberg and Montalembert propose, but which have as yet been only partially erected). Next to the rampart, and following its outline, comes the large, broad, and deep main ditch, which, wherever circumstances will admit, 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, block-houses, abbatis, palisades,

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 *Ajace* 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 so obnoxious to the Austrians, that 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 favorable 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 29th and 30th volumes of the Edinburgh Review. The 48th number of the Quarterly Review contains a critique on his *Ricciarda*. His Essays on Petrarch (London, 1821), and his *Discorso sul Testo di Dante* (1826), are valuable criticisms. He left dissertations and notes on the *Divina Commedia*, which have since been published. He died, Sept. 10, 1827, in the neighborhood of London.

Foss (from the Latin *fossa*), in fortification; a hollow place, commonly full of water, lying between the scarp and counterscarp, below the rampart, and turning round a fortified place, or a post that is to be defended.

Foss Way; one of the four principal highways of England, that anciently led through the kingdom, supposed to be made by the Romans, having a ditch upon one side.

Fossil. (*See Organic Remains.*)

Fothergill, John, an eminent physician, was born at Carr-end, in Yorkshire, in 1712, where his father, who was a Quaker, resided upon a family estate. He studied physic at Edinburgh, took his degree of M. D. in 1736, and then went to London, and entered as a pupil in St. Thomas's hospital. In 1740, he made a tour to the continent, and, on his return, devoted himself to his profession. In 1748, he greatly distinguished himself by a publication entitled an Account of the Sore Throat attended with Ulcers, which passed through several editions, and was translated into French. He also supplied a monthly account of the weather and diseases of London, to the Gentleman's Magazine, which is considered the parent of all statements of the kind. For 30 years, he was at the head of his profession in London. In 1762, he purchased an estate at Upton, in Essex, and formed an excellent botanic garden with hot-houses and green-houses to the extent of 260 feet. He acquired a large fortune, of which he made a most liberal use. On his own society he conferred great benefits, projecting and carrying into effect the institution of a large public school for Quakers at Ackworth, in Yorkshire. He was also the associate of Mr. Howard, in his attempt to alleviate the condition of poor prisoners. Doctor Fothergill was likewise zealous for the political interests of the country, and interfered to prevent that fatal breach with the American colonies which produced their final separation from the parent country. He was also a warm friend to the abolition of slavery. He died in 1780, in the 69th year of his age. His works were published, with memoirs of his life, by doctor Lettsom, in 3 vols., 8vo. (1784).

Fothering; a peculiar method of endeavoring to stop a leak in the bottom of a ship, while she is afloat, either at sea or at anchor, which is performed by fastening a sail at the four corners, letting it down under the ship's bottom, and then putting a quantity of chopped rope-yarn, oakum, wool, cotton, &c., between it and the ship's side. By repeating the latter part of this operation several times, the leak generally sucks in a portion of the loose stuff, and thereby becomes partly and sometimes wholly stopped. Some persons prefer thrumming the sail, instead of letting down the loose stuff; but in this mode the sail is soon chafed through by the hole, if the leak is considerable, without affording sufficient substance to stop it.

Fou; a Chinese ending of geographical names, signifying cities of the first class.

Fouché. (See *Otranto, Duke of.*)

Foul; a sea phrase that is used in distinction from *clear*, and implies *entangled, embarrassed.* Hence *foul anchor*, when the cable is twisted round the stock and flukes; *foul bottom*, when a bay is covered with weeds, grass, shells, filth and rocks.—*Foul hawse* means that the cables are turned round each other, by the ship having swung the wrong way when moored.—*Foul rope;* a rope entangled, and

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 by the Romans; for they said, that, after 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 *Canaries.*)

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, various spots were selected for the markets and the courts of justice. The number of these places was finally increased to 17. 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, brought thither from Greece, that it became necessary to remove many of them. The gilt statues of the 12 great gods were particularly remarkable. This place, once adorned with the most beautiful palaces and the most splendid buildings, is now 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* (*commissi*) is the jurisdiction of the place where the crime is committed; *forum domicilii* and *forum habitationis* (see *Domicil*); *forum apprehensionis*, where the criminal is seized; *forum originis*, where the person is born; *forum rei sitæ* 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, 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 republic, with his *Thyestes*, in which he endeavored to preserve the simplicity and strictness of Alfieri and the Greeks. On account of the applause which this piece received, he wrote a severe criticism on it himself. 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 romance, remarkable for vehemence of passion and feeling, under the title *Ultime Lettere di Jacopo Ortis* (Milan, 1802). An imitation of Werter 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 took this opportunity to go to Paris. 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

serves, "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 about the sources of the Niger. As the Fellatahs are found in the vicinity of Abyssinia, they would be identified with the Falashas of that country, if their language should be ascertained to be the same. Bruce says that the Falashas are Jews, and speak the ancient Æthiopian. About this language little is known. Negro languages possess a peculiar character. An investigation of the idioms of Tibbou, Bornou, Houssa 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 nations occupy coëxtensive parallels of latitude, be compared with the simple, rude dialect of Soudan, 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.

	Singular.	Plural.
water,	*deam.*	
fire,	*gheabingol.*	
sun,	*nandjee.*	
moon,	*lauro.*	
man,	*gorkoo,*	*gorbai.*
woman,	*debbo,*	*eroubai.*
head,	*horee,*	*koiee.*
eye,	*yeteree,*	*gitee.*
hand,	*djungo,*	*djundai.*
dog,	*rawano,*	*dawaree.*
cow,	*naga,*	*nai.*
house,	*sodo,*	*ouro.*
horse,	*putcho,*	*putchee.*
cat,	*musoro,*	*musodee.*
bird,	*sondo,*	*chiullee.*
day,	*handee,*	*nyandee.*
night,	*djemma,*	*baldee.*
year,	*dungoo,*	*doobee.*

Adjectives suffer no change of gender. The pronouns personal are

mee,	I;	*meenorn,*	we.
an,	thou;	*anoon,*	ye.
kanko,	he;	*kambai,*	they.

Possessive pronouns are thus:

horee-am,	my head.
djungo-an,	thy hand.
sodo-mako,	his house.

FOUNDATION, in architecture, is that part of a building which is under ground, and which Palladio makes as deep as one fourth part the height of the whole building, unless there be cellars, when it may be somewhat lower.

Foundation, in ecclesiastical or political matters, is a donation or legacy, in money or lands, for the maintenance or support of some charitable institution, as an hospital, a school, &c.

FOUNDER, TO; to sink or go down; the fatal situation of a ship which is no longer able to keep above water, through accident, or the violence and continuation of a storm, and the extent of the leaks that fill her with water.

FOUNDER; an artist who casts metals in various forms, for different uses, as guns, bells, statues, printing characters, &c.

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 parents rather to expose their offspring, and leave their fate to accident. They usually selected places which were much frequented, where there was a greater chance of the child being saved. In Athens and Rome, they were exposed in particular places. In the 4th century, the emperors Valentinian, Valerius and Gratian prohibited this cruel practice, 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 1620, 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 Benoiston de Châteauneuf, *Considérations sur les Enfants-Trouvés dans les Principaux États de l'Europe*, 1824.) According to the author, the number of foundlings has increased, in the last 40 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 mor-

unfit for immediate use.—*Foul water* is water troubled and rendered turbid by the ship's bottom rubbing on the ground.—*Foul wind* is used to express that the wind is unfavorable, or contrary to the ship's course, as opposed to *large* or *fair*.

FOULAHS, or, as it is sometimes written, FOOLAHS; a numerous nation in Central Africa. They call themselves *Fellan* and *Foulan*. The Negroes call them *Fellatahs*. They extend from the Atlantic to the confines of Darfour, and speak every where the same language. In an interesting communication from Mr. Hodgson to Mr. Duponceau, dated Algiers, June 1, 1829, and published in the National Gazette (Philadelphia, October 24, 1829), it is said, "Of all the nations of Central Africa, described by captain Clapperton, the Fellatahs are esteemed the most remarkable. The publication of his first journey to Soudan represented this people as inhabiting the country of the Negroes, but differing from them essentially in physical character. They have straight hair, noses moderately elevated, the parietal bones not so compressed as those of the Negro, nor is their forehead so much arched. The color of their skin is a light bronze, like that of the Wadreagans, or Melano-Gætulians, 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, subjugated an extensive portion of Soudan. The lamented major Laing, who arrived at Timbuctoo, assures us that they were in possession of that far-famed city. It was an order from the Fellatah governor which compelled him to leave Timbuctoo, and to his instigation or connivance is his death probably to be attributed. Mungo Park was killed by a party of these people, while descending the Quorra. They may be supposed to occupy the banks of this unknown river, from its rise to its termination." They are known on the confines of Senegal and Gambia as *Foulahs* and *Pouls*. Mungo Park describes them under the first denomination, and M. Mollien under the second. "The Fellatahs will probably erect one vast empire in Soudan; and the influence this power may exercise in the great question of African civilization gives to them no ordinary importance. If sultan Bello should be induced to abolish slavery, the most efficient means will have been discovered for its entire suppression. The example of so great an empire, or the menace of its chief, would effectually check the inhuman cupidity or barbarism of the lesser tribes of the coast. Such an event would cause a great revolution in the commerce of these countries, and the arts of civilized life would speedily be adopted. Morocco, Algiers, Tunis and Tripoli would lose their lucrative trade in slaves, which being no longer objects of barter, commerce would seek the more convenient markets of the Atlantic coast, in preference to encountering the horrors and perils of the desert. This view of the subject has not escaped the Moorish statesmen, who, it is known, have been using their influence with the Negro governments to obstruct the free access of Christians among them. The colony of Liberia is destined to have an agency in such a revolution of commerce, and will participate in the great advantages thence to result." The second journey of captain Clapperton, from the Bight of Benin to Sockatoo, gives additional information respecting this people. Réné Caillié, the modern traveller through Central Africa to Timbuctoo, says, "In the course of conversation with the Foulah Guibi, the latter observed that the Foulahs were the whites of Africa, and the Mandingoes the Negroes, by which he meant to impress upon me the superiority of the former. The Foulahs of Fouta are, in general, tall and well made. Their manner is noble and dignified; their color is bright chestnut, somewhat darker than that of the wandering Foulahs; they have curly hair, like the Negroes, a rather high forehead, large eyes and aquiline noses, thin lips, and the face a little elongated. In short, as to their features, they approximate to the European physiognomy. They are all Mohammedans, and extremely fanatical. In their mountains, they cultivate rice, maize and millet; and also cotton, of which they manufacture stuffs in pieces only five inches wide. These narrow strips are used for covering their nakedness. The principal trade of the country is in salt and cotton cloth. They go to Kakondy to barter rice, leather, wax and millet, for salt, with which they afterwards purchase stuffs at Kankan and Sambatikila. The Foulahs are warlike, and ardently love their country," &c. (See London edition, 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. In the communication of Mr. Hodgson, quoted above, a short vocabulary of the Foulah language is given; and the writer then ob

&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. A fortress is valuable as a breakwater against the stream of a hostile invasion; as a bar before passes which do not admit of being turned; as a fulcrum or 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, or gather, reinforce and rest preparatory to 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 an enemy, answers no good end, can delay an invasion but very little, 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 commanders, 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 one 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 favor of the scheme, under other circumstances. Scientifically considered, the site of the place is of especial importance in the construction of 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 contrivance of numerous 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; the capital of Martinique, and the residence of the governor, situated on the northern shore of the bay of Cul-de-Sac-Royal; lat. 14° 35′ 49″ N.; lon. 61° 5′ 37″ W. The town, including the whole parish, contains 9200 inhabitants, of whom 1127 are white, 1642 free colored persons, and 6431 slaves. The parish contains 19 sugar-works, which produce about 800 tons of raw sugar. The *arrondissement* of Fort-Royal contains eight parishes, with 29,504 inhabitants, of whom 2788 are white, 3828 free blacks, and 22,888 slaves.

Fortuna; called, by the Greeks, Τύχη, the arbitress of success. According to Hesiod, she was a daughter of Oceanus; according to Pindar, a sister of the Fates. She had temples at Corinth, Elis and Smyrna, was worshipped in Italy before the building of Rome, and had a celebrated temple at Antium, in which were two statues, which were consulted as oracles, and gave responses either by signs or by lot. She had also a temple at Præneste, whence she was called *dea Prænestina*. Many temples were erected to her at Rome. She is generally delineated with two rudders, with one of which she guides the ship of prosperity, with the other that of misfortune. At a later period, she was represented with a bandage 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, a globe between a rudder and an ear of corn, and having a wheel standing on it. On a coin of the emperor Geta, she is represented sitting on the earth,

tality 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 fount 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 *c*, 11,000 of *e*, 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; those of the upper case having other proportions, 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 nearly to the same height as that head, abating only a little for the resistance of the air, with that of the adjutage, &c., in the fluid rushing through; but, when the fountain is produced by any other force than 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 the same fluid, whose pressure 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 Achaia, there was a public fountain established by Theagenes, which was celebrated for its grandeur and magnificence. The *Pirene*, a fountain at Corinth, was encircled by an enclosure of white marble, which was sculptured into various grottoes, from which the water ran into a splendid basin of the same material. Another fountain in Corinth, which was called *Lerna*, was encircled by a beautiful portico, 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 *Arsinoë*, 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 neighborhood, are splendid structures. 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 superb 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 Michael Angelo, in the figure of a sturdy woman wringing a bundle of clothes, from whence the water issues that supplies the basin.

Fouqué, 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 Büttner, the secretary of Fouqué), which contain his correspondence with Frederic the Great, are therefore highly interesting. His nephew has written his life (Berlin, 1825), from family papers. General Fouqué died May 2, 1774.

Fouqué, Frederic, baron de la Motte, major in the Prussian service, and knight of the order of St. John, a very voluminous modern German writer, the nephew of the preceding, was born in New Brandenburg, Feb. 12, 1777, and lives at present at and near Berlin. He served as a lieutenant in the Prussian horse-guards against the French, towards the end of the last century. He then devoted himself to study for a number of years, and, in 1813,

when all Prussia rose against the French, he again entered the service, rose gradually to the rank of captain, and, on the conclusion of peace, was dismissed with the rank of major. Since that time, he has been actively employed in writing romances. In the intellectual world, one extreme generally produces the opposite, as in the physical world. Thus the sceptical spirit of the end of the last century, which sneered at the romantic virtue of the middle ages, gave rise to that school in Europe, and particularly in Germany, which delights in chivalric forms, and often mistakes romantic exaggeration for depth of thought and loftiness of poetic feeling. Fouqué appears to have been much influenced by this manner of thinking; and, though once extremely popular, his late productions are hardly read at all, particularly since he began to mix the praises of obsolete systems of government with his romantic narratives, discovering the highest political excellence in the old feudal times. In fact, his notions are absurd, and so imbued with feudal prejudices, that they would hardly deserve mention, were it not that he may be considered as being, in this particular, the representative of a class, which, unfortunately, is not yet extinct in Germany. There is a feudalism in Fouqué's works beyond what ever existed in the feudal times; his style of writing, besides, is in the highest degree quaint. It cannot be denied, however, that he has often shown genius. Some of his best known works are *Undine*, *Der Zauberring*, *Sigurd der Schlangentödter*, *Albino*, *Eginhard und Emma*, &c. He has also written a considerable number of poems; one of the best of which is that which he produced soon after the murder of Kotzebue by Sand.

Fouquier-Tinville, Anthony Quentin, notorious for his ferocious cruelty in the French revolution, was born at Hérouelles, 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 alacrity in pronouncing the verdict of guilty, and attracted the attention of Robespierre, who gave him the office of public accuser before this tribunal. The victims now became numberless. Fouquier drew up the scandalous articles of accusation against the queen Marie Antoinette. His thirst for blood seems to have been increased by gratification, until it became a real insanity. He proposed the execution of Robespierre and all the members of the revolutionary tribunal, 9th Thermidor, 1794, was himself removed on the 14th Thermidor (Aug. 1), 1794, and arrested. He died May 7, 1795, under the guillotine, in a cowardly manner, and as infamously as he had lived. There does not appear to be a trait in the life of this monster, which can entitle his crimes to the same 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, and was even disposed to become an actor; 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 Ramazzini's treatise on the Diseases of Artisans. In 1780, 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, Guyton-Morveau 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 less by the discovery of unknown bodies than by the systematic arrangement of the principles of the 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 school of public works, out of which the polytechnic school afterwards sprung, and coöperated in the establishment of the normal schools. In Septem-

ber, 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, among which 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 Médicine éclairée par les Sciences Physiques*, 4 vols. 8vo. He also published many papers in the Memoirs 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 crafty 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 bushy tail, more pointed muzzle, nocturnal pupils, less slanting superior incisive teeth, fetid odor, 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 animals, but also on some fruits. 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. vulpes*) 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 purposes of escape, if necessary. He is one of those animals that are made the objects of diversion in the chase. When he finds himself pursued, 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 embarrassed by thorns and briers. He runs in a direct line before the hounds, and at no great distance from them. When overtaken, he fights very obstinately. 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. There are several species of the fox found in this country.—*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 Frozen ocean in both continents. 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 color 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 cubs, 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 carcasses 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 it is a singular circumstance, that these animals 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. argentatus*). This species is strikingly similar to the common fox, and is only distinguishable by its copious and beautiful fur, which is of a rich and shining black color, having a small quantity of white mixed with it in different proportions. It inhabits the northern parts 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 has been suggested by F. Cuvier.—*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 color 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 dark gray. The under parts of the body towards the tail are very pale red. It is about 2 feet long and 18 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 color 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, from which he derives his name. 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. cinereo-argentatus*) is common throughout the country, more particularly in the neighborhood of habitations. Its general color 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 fleetest antelope, and seems rather to fly than to 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 black. The hair is fine, dense and soft. It somewhat resembles the *C. corsac*, 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 19, he persuaded himself that he had received a divine command to forsake every thing else, and devote himself solely to 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, walked 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; whence he soon after made excursions through the neighboring counties, where he preached to the people in the market-places. About this time, he began to adopt the peculiar language and manners of Quakerism, and experienced some of the persecutions to which all active novelty, in the way of religious opinion, was in those days exposed. At Derby, the followers of Fox were first denominated *Quakers*, 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 country magistracy, in consequence of his interruption of ministers during divine service, and ex-

clamations 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 formal and united society. In 1669, he married the widow of judge Fell, in the same simple manner which still distinguishes 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 gaol, 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 1690, in the 67th year of his age. Exclusive of a few separate pieces, the writings of Fox are collected into 3 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 16, he was entered at Brazen-nose college, Oxford, and, in 1543, was elected a fellow of Magdalen college, in the same university. Applying himself to theology with great assiduity, he secretly became a convert to the principles of the reformation. This tendency being at length suspected, a charge of heresy followed, and, by the judgment of his college, he was, in 1545, 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 by his former pupil, 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 enforced by the ecclesiastical commissioners. In 1575, a persecution took place of the German Anabaptists, when Fox sought an audience of Elizabeth, and endeavored to convince her of the cruelty and injustice of condemning them to the flames. He died, greatly esteemed and lamented, in 1587, in his 70th year. His principal work is the History of the Acts and Monuments of the Church, commonly called *Fox's Book of Martyrs*, first printed in 1553, in 1 vol., folio; reprinted in 1632 and 1641, in 3 vols. folio. In 1684, it had reached the 9th 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 indulgence with the most careful attention to his education. He was sent to Eton, whence he removed to Hertford college, Oxford, and his classical acquirements were very considerable. His father procured him a seat for the borough of Midhurst, in 1768, before he was of legal age, and, in 1770, the same interest 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 treasury. Acting at this period under the influence of his father, his parliamentary conduct led to little anticipation 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 being a supporter 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 opposition 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 candidate

for the representation of the city of Westminster, 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 Rockingham, Mr. Fox obtained the office of secretary of state for foreign affairs. But the death of the marquis of Rockingham suddenly divided the party; and, on the earl of Shelburne becoming first lord of the treasury, 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 ensuing election, nearly seventy of his friends lost their seats, and he had himself to enter into a strong and expensive contest for the representation of Westminster. 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 regency. The contest for the unrestricted right of the heir-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 in criminal cases, 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 concluded it, his support. When hostilities were renewed, 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, however, drawing towards the close; his health began 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 58th 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 in England. That he was a sincere friend to all the broad and generous principles, on the due developement of which rest the freedom and best interests of mankind, is not to be doubted, and that they were alloyed by 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, allowing for a dissipated youth, all accounts agree. Friends and foes equally testify to his ingenuous and benign character. The result of this happy temperament was, that no man was ever more idolized by a wide and extensive connexion—a fact rendered conspicuous by more than one striking circumstance. As an author, besides 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, entitled 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 history of the revolution of 1688. It is written with unpretending simplicity.

FOXGLOVE. (See *Digitalis*.)

FOX INDIANS; in North America, on the Mississippi and Ouisconsin; number, 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 River; a river in the North-western Territory, U. 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 Ouisconsin by a portage of 1½ miles. The portage is over a low prairie, which is sometimes overflowed, and passable with boats. Though there are some obstructions for about 20 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, lieutenant-general, and member of the French chamber of deputies, a distinguished French liberal, one of the first orators in her legislative assemblies, and a firm supporter of law and liberty, whose destiny did not allow him to witness, in the glorious revolution of 1830, the consummation of his own and his party's labors, was born at Ham, Feb. 3, 1775, and was educated in the military school *la Fere*. 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 Jemappe. 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 unfavorably 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 England, 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 artillerists, to assist sultan Selim against the Russians and English; 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 English 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 Salamanca, 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 Tordesillas, October 29. After the defeat of king Joseph and Jourdan at Vittoria, June 21, 1813, he collected 20,000 men at Bergara, beat 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 conflict. General Foy, after reinforcing the garrison of St. Sebastian, retreated across the Bidassoa without loss. In the battles at Pampeluna and Jean-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 division on the field of Waterloo, where he 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 honorable scars, he now at once distinguished himself as an orator, and became the favorite 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 on the floor, 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 guaranties of civil liberty. As a specimen of the eloquence and noble spirit of this soldier of a hundred fights, we will give his remarks in the chamber of deputies, February, 1821, on the aristocracy, which it was the favorite object of a party in France to restore. In reply to the question of an ultra, *Qu'est ce que c'est que l'aristocratie?*—"*Je vais vous le dire* (said Foy), *l'aristocratie au dix-neuvième siècle c'est la ligue, c'est la coalition de ceux, qui veulent consommer sans produire, vivre sans travailler, tout savoir sans rien avoir appris, envahir tous les honneurs sans les avoir mérités, occuper toutes les places sans être en état de les remplir.*" 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 he left 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, précédés 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 *frate*, 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 16th century, 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 the child was uninjured. He was patronised by cardinal Bembo, 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 71. Among the moderns who have exercised their talents in the composition of Latin verse, few have obtained higher reputation than Fracastorius. 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 *Alcon, sive de Cura Canum venaticorum.* Among his prose works on professional topics, are treatises *De Sympathia et Antipathia; De Contagione 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 into 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 $\frac{7}{8}$, 8 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 $\frac{2}{4}$, $\frac{3}{6}$, $\frac{7}{9}$, $\frac{9}{11}$, $\frac{101}{701}$, &c. An *improper fraction* is when the numerator is equal to or greater than the denominator, as $\frac{5}{5}$, $\frac{8}{4}$, $\frac{12}{12}$, $\frac{187}{8}$, &c. A *simple fraction* is that which consists of a single numerator and single denominator; and is either proper or improper, as $\frac{5}{7}$, $\frac{11}{7}$, $\frac{16}{81}$, &c. A *compound fraction* is a fraction consisting of two or more other fractions connected by the word *of*; thus $\frac{2}{3}$ of $\frac{3}{4}$, or $\frac{2}{5}$ of $\frac{7}{11}$ of $\frac{6}{9}$, &c., are compound fractions. A *complex fraction* is that whose numerator and denominator are both fractions; thus $\frac{\frac{3}{4}}{7\frac{1}{2}}$ 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, $7\frac{3}{4}$, $9\frac{1}{9}$, &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 in books on arithmetic. A correct understanding of them is of great importance for the proper prosecution of arithmetical and mathematical studies.—Decimal fractions include every fraction, the denominator of which is 10 or a power of it; as $\frac{5}{10}$, $\frac{7}{1000}$, &c. Our beautiful system of writing numbers enables us to write decimal fractions without expressing the denominators, just as we are enabled to write the whole number without mentioning whether they are hundreds, thousands, &c. The following scheme will explain it.

	hundred thousands	ten thousands	thousands	hundreds	tens	units		tenths	hundredths	thousandths	ten thousandths	hundred thousandths	millionths	
....	5	4	0	4	3	2	.	4	7	2	3	0	7	....

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 stop decreases in value ten times. Writing decimal fractions is therefore only an extension of our system of writing whole 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.

Franc; a French silver coin, containing ten *decimes* and a hundred *centimes*. (See *Coins*.)

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 1827, of 31,851,545. According to the annual increase, it would be, in 1830, about 32,500,000. It is bordered on the north-east by the Low Countries, the Prussian province of the Lower Rhine, and Rhenish Bavaria; on the east, it is separated from Baden by the Rhine, and touches Switzerland and Sardinia; on the south, its boundaries are the Mediterranean, the Pyrenees, and the Bidassoa; the ocean bounds the rest. The island of Corsica, and the Hières, in the Mediterranean, and the isles of Oleron, Ré, Noirmoutier, Belle-Isle, 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, Yanaon in the northern Circars, Chandernagore in Bengal, Mahe 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; in America, Martinique and Guadaloupe with its dependencies, Guiana, and the small islands of St. Pierre and Miquelon, near Newfoundland (see *Colonies*), containing 225,000 inhabitants. The territory is divided into 86 departments (q. v.), which generally derive their names from the rivers. They are subdivided into 363 arrondissements, 2844 cantons, and 38,339 communes. Each department is governed by a prefect, and each arrondissement by a sub-prefect. The cantons have no administrative powers. The communes are under a mayor. All these 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 42,500,000 inhabitants, of which 28,000,000 were French, 6,500,000 Italians, 4,500,000 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 4500 feet high. 2. The Jura mountains lie to the south of these, and their summits rise to the height of 6000 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 Lozère (6510 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 necessarily have a great influence on their climate and productions. The narrow valley of the Rhine 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 receives the Saône, 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*, ii, 451), which form an extensive internal water communication. 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 18,179,590 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 unfruitful in grain, but the genial 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 Bordeaux, 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, Orleans 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 harbors are therefore few. On the Mediterranean, the coast of Languedoc is very dangerous; but Provence abounds in good harbors. 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:—

	Hectares.
Arable land,	22,818,000
Vineyards,	1,977,000
Kitchen gardens,	328,000
Gardens and orchards,	687,000
Miscellaneous culture,	780,000
Olives,	43,000
Hops,	60,000
Chestnuts,	406,000
Parks, groves, nurseries,	39,000
Copse wood,	6,521,470
Osieries,	53,000
Pasturage,	3,525,000
Meadows,	3,488,000
Landes, heaths, &c.,	3,841,000
Turbaries,	7,000
Mines and quarries,	28,000
Buildings,	213,000
Canals,	9,000
Ponds,	213,000
Marshes,	186,000
Roads, rivers, &c. (unproductive),	6,555,000

The value of capital vested in agricultural pursuits is estimated at 37,522,061,476 francs; the gross annual produce at 4,678,708,885 francs; the expenses of cultivation at 3,334,005,515; leaving a profit of 3¼ per cent. on the capital. Previous to the revolution, the produce of the soil in France was burdened with an annual tax of about $95,000,000. The cultivators were chiefly *métayers*, or mere tenants at will, who supplied the labor while the proprietor supplied the capital. The rent paid was generally one half the produce. The cultivators also labored 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 manorial 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 *corvée*, which fell very heavy on the laborers. But the conversion of the estates of the church and the nobility into national 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 hold a place

in husbandry. The produce of wheat in the best cultivated districts, and on the best soil, hardly exceeds 18 bushels per acre: an English farmer expects 25 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 1,657,671: 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 51,600,000. The French are the best wine makers in the world. The Champagne, Burgundy, Claret, Hermitage (*see the articles*), are drank 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 brandies (q. v.) of France are the best in the world. The value of the whole produce of wine and brandy is about 800,000,000 of 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 endeavors 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 to stock and manure them; that two thirds of the inhabitants are without animal food; that more than one third subsist entirely on oats, buckwheat, rye, chestnuts or potatoes, and that the agricultural population is too great for the prosperity of France. Two thirds of the population is agricultural. Mr. Jacobs, who visited France in 1819, makes the same remarks. France possesses a soil and climate capable of furnishing her with all the raw materials of manufacture, except cotton. The manufacture of fine woollen 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 native wool manufactured in 1819 was 38,000,000 kilogrammes (of about 2⅔ 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, 105,000,000: the quantity exported was about one thirteenth of the whole quantity manufactured. By the exertions of Henry IV, the mulberry-tree was cultivated in 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 amounted to 45,560,000 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 colors. In 1812, 10,362,000 kilogrammes 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 Cambray are among the most valuable products of French 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 kilogrammes of cast iron were produced; in 1825, 160,000,000. Gilding and watch-making are carried on, chiefly in Paris, to the annual value of about 38,000,000 francs each. Printing also employs a great number of persons at Paris. In 1814, the number of printed sheets was 45,675,039; in 1820, 80,921,302, and in 1826, 144,561,094. Notwithstanding the low price of labor in France, the industry of that country cannot enter into competition with that of England. 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 England. 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 England. 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, according to Dupin, is equal to that of 480,600 men; that of England 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

England. 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 163,056,000 were productions of the country, and 277,486,000 manufactured articles. The amount exported to the U. States was 55,000,000, being more than that to any other country. The imports for the same year were of the value of 454,861,000 francs; of which 272,873,000 francs were raw materials for manufacture, 121,957,000 natural productions for consumption, and 60,030,000 manufactured articles. In 1824, the number of sailors in French ships was 328,489; of whom 26,649 were engaged in foreign commerce, 47,283 in the fisheries, and the remainder in the coasting trade. The navy, according to the budget of 1828, consisted of 36 ships of the line, 35 frigates, 8 steam-boats, and 186 other vessels, and 14,963 officers and sailors. The army, in 1828, amounted to 233,770 men, and was recruited by voluntary enlistment and annual levies, every Frenchman of 20 years of age being bound to serve for a term of eight years. The receipts of 1828 were 1,037,104,491 francs; the expenditure, 1,035,415,552 francs. The *impôt foncier*, or direct tax on land, the *mobilier*, on houses and furniture, the *patentes*, on trade and profession, the window tax, stamp duties, salt tax, &c., are the principal taxes. The principal expenses were, for the civil list and royal family, 32,000,000; war department, 196,000,000; navy, 57,000,000; ministry of the interior, 92,721,400; of justice, 19,641,934; of spiritual affairs and public instruction, 35,000,000; of foreign affairs, 9,000,000; of finances, 102,477,850; of collecting the revenue, &c., 137,512,551; arrearages of *rentes*, 201,357,867; sinking fund, 40,000,000. The receipts and expenditures, for the last nine years, have been as follows:—

Year.	*Revenue.*	*Expenditure.*
1821,	915,591,435 fr.	882,321,254 fr.
1822,	918,809,941	904,917,941
1823,	914,498,987	905,206,653
1824,	909,943,636	909,379,360
1825,	905,306,633	904,732,072
1826,	924,095,704	915,504,499
1827,	915,428,342	916,608,734
1828,	1,037,104,491	1,035,415,552
1829,	986,156,821	908,186,158

The public debt is 3,000,000,000 francs. The estimated revenue for 1830 was 979,552,224 francs, and the expenditure, 977,935,329; but the recent revolution must have rendered this calculation uncertain. The system of public instruction, under the late dynasty, was subject to the ministry of ecclesiastical affairs. Previous to the revolution of 1789, there were 23 universities, of which the most celebrated was that of Paris. These were superseded by the central, primary and secondary schools. Under the empire, the university was organized, which, with some modifications, was preserved after the restoration. The university comprised 26 academies in the principal cities, each under a president, and containing several faculties and a *collége royal* (*lycée*, under the empire). The system of primary instruction was discouraged by the Bourbons. In 1828, Dupin states that 15,000 communes were destitute of primary schools, and that 14,000,000 persons in France did not know how to read and write. The *institut royal* is divided into four academies. (See *Academies*.) Before the revolution of 1830, the Catholic religion was the established religion of the state. (For the numbers of the French clergy of the different degrees, in 1828, see the beginning of the article *Ecclesiastical Establishments*.) The number of the nunneries, at that time, was 3024, with 20,950 nuns. The Calvinists and Lutherans are differently estimated, at from 892,947 to 6,000,000; the Jews at 60,000; Anabaptists, Quakers, &c., at 4500.

The present reigning family (since Aug. 9, 1830) is that of Orleans. The king is Louis Philip I, born Oct. 6, 1773, and, previous to his accession to the throne, duke of Orleans; he received (1824) the title of *royal highness*. (See *Louis Philippe I.*) The house of Orleans is a collateral line of the late reigning family of Bourbon. This distinguished line is descended from the only brother of Louis XIV, Philip, duke of Orleans. The following have been the reigning branches of the Capet dynasty: 1. *Hugh Capet* (987), died 996; Robert, died 1031; Henry I, died 1060; Philip I, died 1108; Louis IV, died 1137; Louis VII, died 1180; Philip II (Augustus), died 1223; Louis VIII, died 1226; Louis IX (the Saint), died 1270; Philip III (the Bold), died 1285; Philip IV (the Fair), died 1314; Louis X (Hutin), died 1316; Philip V (the Long), died 1321; Charles IV (the Fair), died 1328:—2. *branch of Valois:* Philip VI, died 1350; John (the Good), died 1364; Charles V (the Wise), died 1380; Charles

VI, died 1422; Charles VII, died 1461; Louis XI, died 1483; Charles VIII, died 1497:—3. *branch of Orleans:* Louis XII, died 1515; Francis I, died 1547; Henry II, died 1559; Francis II, died 1560; Charles IX, died 1574; Henry III, died 1589:—4. *branch of Bourbon:* Henry IV, died 1610; Louis XIII, died 1643; Louis XIV, died 1715; Louis XV, died 1774; Louis XVI, died 1793; (*Louis XVII died* 1795):—[French republic, from 1792 to 1804:—Napoleon (Bonaparte), emperor of the French, from 1804 to 1814]:—Bourbons restored by foreign arms: Louis XVIII, from 1814, died 1824; Charles, to 1830, when he was dethroned:—5. *new house of Orleans:* Louis Philip I, with the title *king of the French* (*roi-citoyen*). Of the dethroned Bourbon family, there are living the ex-king, Charles X; his son Louis Antoine, duke of Angoulême (late *dauphin*), born Aug. 6, 1775, married his cousin, Marie Therese, daughter of Louis XVI. The second son of Charles X, duke of Berry, born Jan. 24, 1778, married to Caroline, princess of Naples (born Nov. 5, 1798), was assassinated by Louvain, Feb. 14, 1820. His children are Marie Louise (mlle. d'Artois, born Sept. 21, 1819), and Henry (Charles Ferdinand Marie Dieudonné), duke of Bordeaux, born Sept. 29, 1820, after the death of his father, late heir-presumptive. Charles and the dauphin abdicated in his favor, calling him *king Henry V.* The royal arms of France are the arms of the house of Orleans. The royal family continues to bear the names and arms of Orleans, and the duke of Chartres, eldest son of the king, takes that title. The members of the present royal family are, Louis Philip, king, married to Marie Amalia, princess of Naples, born April 26, 1782. Their children are, 1. Ferdinand (Philip Louis Charles Henry), late duke of Chartres, now duke of Orleans, born Sept. 3, 1810; 2. Louise Marie (Therese Charlotte Isabelle), mad. d'Orleans, born April 3, 1812; 3. Marie Christine (Caroline Adelaide Francisca Leopoldina), mad. de Valois, born April 12, 1813; 4. Louis (Charles Philip Rafael), duke of Nemours, probably now of Chartres, born Oct. 25, 1814; 5. Marie Clementine (Caroline Leopoldina Clotilde), mad. de Beaujolais, born June 3, 1817; 6. Francis (Ferdinand Philip Louis), prince of Joinville, born Aug. 14, 1818; 7. Henry (Eugene Philip Louis), duke of Aumale, born Jan. 16, 1822; 8. Antoine (Marie Philip Louis), duke of Montpensier, born July 31, 1824. The sister of the king is Eugenie (Adelaide Louise), mad. de Orleans, born Aug. 23, 1777.—France is a limited monarchy, hereditary in the eldest male line. If the late changes become permanent parts of the system, it will be the most limited monarchy in Europe. The charter (see *Charte Constitutionnelle*) has undergone several important alterations. The principal are, that the Roman Catholic religion has ceased to be the religion of the state; the 14th article, which the Polignac ministry cited in their late attempt to overthrow the constitution, has been changed, so as to stand as follows,—"The king is the supreme head of the state; he commands the land and sea forces, declares war, makes treaties of peace, alliance and commerce; appoints to all offices of the public administration, and makes all the regulations and ordinances necessary for the execution of the laws, under the responsible advice of his ministers;" any of the three branches of the legislature can propose laws; the chamber of peers may sit without that of the deputies only as a court of justice; peers may speak in the house at the age of 25 years; princes of the blood may sit in the house of peers without a special summons from the king; the deliberations of the peers are public; the renewal of one fifth of the deputies every year is abolished; persons are eligible as deputies at the age of 25 years; the deputies elect their president without the concurrence of the king; and the electors choose the officers of the electoral colleges without the interference of the king (see *Elections*); articles 46 and 47 of the old charter, respecting amendments, and the adoption of the tax acts by the deputies, previously to being sent to the peers, are repealed, as is also article 56, exempting the ministers from impeachment, except for treason or extortion; the *prevôtal* courts are abolished; the king takes the constitutional oath, not at the time of the coronation, but on his accession, as in England. Besides this, provision is to be made, by separate laws, for, 1. the trial of offences of the press by a jury; 2. the responsibility of ministers and other agents of power; 3. for the reëlection of deputies promoted to offices with salaries; 4. the annual vote of supplies for the army; 5. the organization of the national guard; 6. the settling the rank of all naval and military officers; 7. departmental and municipal governments, founded on the elective system; 8. public instruction provided for; liberty of teaching allowed to all; 9. the abolition of the double vote, and of the electoral candidates and their eligibility. The charter is

intrusted to the protection of the national guard and the patriotism of the nation. 252 deputies voted on the subject of these changes, 219 for, 33 against them. The charter, with the "changes and modifications expressed in the declaration of the chamber of deputies," was presented to Louis Philip, who, on the 9th of August, 1830, took the constitutional oath; and thus the *constitution octroyée* (see *Constitution*) was changed into a real contract between the ruler and the people.

The orders, under the Bourbons, were those, 1. of St. Michael, founded in 1469, and renewed in 1665; 2. of the Holy Ghost, founded in 1574; 3. of St. Louis, founded in 1693, since 1759 connected with an order of merit for Protestants; 4. of St. Lazarus, connected, since 1683, with the order of Our Lady of mount Carmel; 5. the religious order of the holy sepulchre of Jerusalem, founded in 1254; 6. the legion of honor, established by Napoleon, divided, since 1816, into five classes.

French Decimal System. The decimal system of weights, measures and time, 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 one quarter of a meridian—3 feet, 0 inches, 11 $\frac{44}{100}$ lines Paris measure, or 3 feet, 3 inches, $\frac{37.1}{1000}$ English. 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; *mille*, 1000: the latter—*deca*, 10; *hecaton*, 100; *chilion*, 1000; *myria*, 10,000. The following forms, therefore, are used (the word *mètre* being always understood): 1. For the division: *deci*, $\frac{1}{10}$; *centi*, $\frac{1}{100}$; *milli*, $\frac{1}{1000}$. 2. For the multiplication: *deca*, 10 times; *hecto*, 100 times; *kilo*, 1000 times; *myria*, 10,000 times. (The reader will observe, that all the names which express division end in *i*; those which express multiplication, in *a* or *o*.) Thus, *mètre*, 3.28 feet; *decimètre*, .328 feet; *decamètre*, 32.8 feet, &c. The same process is applied to all other measures; and it is only necessary to know the relation of any given unit of measure to the basis measure, in order to be able to make the necessary reductions. These units of measure are—1. Of square measure, the *are*= 100 square *mètres*; 2. of solid measure, the *stère*=1 cubic *mètre*; 3. of measures of capacity, the *litre*=1 cubic *decimètre*; 4. of weights, the *gramme*=the weight of 1 cubic *centimètre* of distilled water. The following table will render the reduction of these weights and measures into the English, easy:

The *Metre*	is	3.28 feet, or 39,371 in.
Are	is	1076.441 square feet.
Litre	is	61.028 cubic inches.
Stére	is	35.317 cubic feet.
Gramme		15.4441 grains troy, or 5.6481 drams avoirdupois.

The old weights and measures of France were as follows:—Long measure. The *toise* or fathom of France is equal to six 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 42,638 English feet, inches or lines. Thus one French foot equals 1.06597 English, or 12.78934 English inches; and hence one English foot equals 11.26 French inches. The Paris *aune* was $46\frac{17}{20}$ English inches. In the old French road measure, the *lieue*, or league, is two French miles, each mile 1000 *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 (20 to a degree) equals 2853 *toises*, or 6081 English yards; and the astronomical league (25 to a degree) equals $2282\frac{2}{7}$ 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 marc*, makes the pound or livre contain two *marcs*, 16 *onces*, 128 *gros*, 384 *deniers*, or 9216 grains. The French *marc* =3780 grains troy weight. For commercial weight, the *poids de marc* was likewise used, and 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 *minots*, or 144 bushels. Wine measure was the *muid* of 36 *setiers*, 144 *quartes*, or 288 pints. 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 *decimètre*, *palme* (palm); the *decamètre*, *perche* (rood). 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* (4½ of silver, with an alloy of ½ of copper), and is divided into *decimes* and *centimes*, 10th and 100th parts. The decimal system was also applied to the calendar. Each of the 12 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.

History of France.—I. *To the Time of Charles the Bald.* A confederacy of German tribes, having conquered the Lombards, assumed the name of *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, 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 Gordian, Maximian, Posthumius, Constantius and the Cæsar Julian, in Gaul, in the island of the Batavians and in Britain, where, together with the Saxons, they supported the usurper Carausius. The Salians, inhabitants of the country on the Saale, 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 themselves in Belgic Gaul, and on 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 Zulpich (496); the Bretons in Armorica (Bretagne), 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 his own hands, after having been baptized by 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 752. The four sons of Clovis divided the kingdom into Austrasia and Neustria, or the Eastern and Western monarchy; 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 *majores domus* (governors of the palace, afterwards *maires du palais*) still preserved the unity of the monarchy. These officers finally dispossessed the Merovingians of the throne. Pepin of Heristal, Charles Martel, Charlemagne and Pepin the Short are particularly distinguished in the history of the second or Carlovingian race. Heristal 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 favored by Carloman 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 sprung the Carlovingians, who wore the crown of France for 235 years. His son Charlemagne extended his dominions from the Ebro to the Lower Elbe, the Saale and the Raab; 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 imperial crown of the West. The governments of Constantinople 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),

* A citizen of Rheims is said to have saved the fragments of the Ampoule (see *Ampulla*), which was broken during the revolution, with some drops of the ointment it contained. These drops were put in the new flask used at the coronation of Charles X, as all the antiquated flummery was to be revived on that occasion.

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 *Histoire des Français.*)

2. *From Charles the Bald to Hugh Capet* (843—987). 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 ban* only when the whole country was threatened by the general enemies, such as the Normans and Saracens. The incursions of the Normans furnished the barons, who aimed at independence, with a pretence for building strong castles, which soon became the principal support of the feudal nobility, and the strong holds of the oppression which they exercised towards the nation. The royal power became a mere *suzeraineté*, or feudal superiority. Charles the Fat reunited, for a short time, the dominions of Charlemagne; but he was deposed (887). Burgundy was separated from France, and Eudes, count of Paris, chosen king by the estates of France, on account of his great qualities. After a long war, Eudes was obliged to surrender the crown (897) to Charles the Simple. The Carlovingians continued to rule in France until 987; but the high nobility paid little regard to the royal dignity; they divided the domains of the crown among themselves, and the crown vassals (the principal of whom were the dukes of Francia, Burgundy, Gascony, Normandy, Aquitania (Guienne), the counts of Flanders, Vermandois, Champagne, Isle de France and Toulouse) finally made themselves masters of so many provinces, that only Soissons, Laon and some small districts, remained to the last of the Carlovingians. Lorraine was united with Germany. In this unhappy condition of the country, the importance of the ruling dynasty declined, until, on the death of Louis V (987), Hugh Capet, the powerful duke of the Isle de France, count of Paris and Orleans, ascended the throne. Charles, duke of Lower Lorraine, and uncle of Louis, was excluded from the succession, under the pretext that, as vassal of Otho, emperor of Germany, he could not become king of France; and the Capetian race (q. v.) occupied the throne of the Carlovingians. The government itself was a monarchy without strength, and limited by a feudal aristocracy. There were, besides a numerous civil and military nobility, 40 powerful vassals, descendants of those who had received shares in the distribution of the conquered territory, which they had rendered hereditary as early as the reign of Charles the Bald; the bearer of the crown only ruled as *primus inter pares.* The kings, therefore, were obliged to reconquer the prerogatives of the crown from these proud barons, until the *états généraux* were finally established.

3. *The Increase of the Power of the Crown, and the Formation of the Feudal Estates* (987—1328). The hereditary kings of the first Capetian line limited the power of the crown vassals, by uniting with a part against the remainder, and with the church against the lay vassals in general. In this way, they acquired the crown lands and royalties. The state itself, in the middle of the 12th century, contained only an area equal to about eight or nine of the present departments, with about 1,500,000 inhabitants. It included the cities of Amiens, Laon, Beauvais, Paris, Melun, Orleans, Nevers and Moulin; so much were the proper possessions of the crown diminished by the encroachments of the imperious vassals. (The present population of this district amounts to 8,000,000.) At that time, 1. Thierry d'Alsace, count of Flanders, possessed, with sovereign power, 16 of the present departments, which now contain 5,600,000 inhabitants; 2. Thibaut, count of Champagne, seven departments, with the towns of Mezieres, Chalons, Troyes, Chaumont, Chartres and Blois, now containing 1,800,000 inhabitants; 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, Languedoc, Lyons, Provence, &c. 5. But the most important part belonged to the king of England, Henry II, who possessed 28 of the present departments, now containing 10,500,000 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 favored this design, and, after the short administration of the abbé 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

people. Under Philip II, Augustus (1180—1223), the number of the *pares regni* was limited to six ecclesiastical and six lay vassals. 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 1285). 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 Mai*.) 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 extirpation 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 Philip VI (grandson of Philip III). 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 Bretigny, 1360, 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 Du Guesclin, were able to restore order only for a short time. Then came, under Charles VI (died insane, 1422), the epoch of the Armagnacs. A civil war of the crown-vassals, 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 Calais. During this period, the kings 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 obtain an unlimited 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, *Dissimuler c'est regner*, obtained this object by violence and cunning. The 280 years' quarrel with the house of Hapsburg, which obtained the inheritance of Burgundy on the death of Charles the Bold (1477), originated during his reign. (See *Netherlands*.) On the contrary, his son and successor, Charles VIII (died 1498), obtained the hand of the heiress of Bretagne, and thus accomplished the union of that duchy with France. He then concluded a peace with Austria, at Senlis, 1493, 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 Bretagne. He was a stranger to the Machiavellism of his predecessors, and the country was indebted to him for 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 with 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, contested in five wars the power of Charles V and Philip II, and concluded an ineffectual alliance with the Ottoman Porte. On the other hand, Francis I united the duchy of Bretagne 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 Verdun. 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 flourished under Francis I, softened the ferocity of fanaticism. The foundation of the national debt, the weight of which broke down the throne 250 years later, was 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 Medici), France was inundated with the blood of Frenchmen, shed in the religious wars from 1562. (See *Bartholomew, St.*) The haughty Guises removed the Bourbons, princes of the blood, from court, because they were Huguenots, and finally aspired to ascend the throne themselves. The feeble Henry III caused the duke of Guise to be assassinated, and his brother, the cardinal, to be murdered in prison (1588). This was the signal to the confederates at Paris, for the death of the king (1589). (See *Henry III* and *IV.*)

5. *France, a European Power under the Bourbons until* 1789. Two hundred years before the revolution, the first Bourbon of the Capetian race, Henry IV, 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 (1598). Henry, aided by counsel of the wise Sully, labored 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 wavering in the first years of the 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 Sungaw, and confirmed her in the possession of the bishoprics of Metz, Toul and Verdun: the treaty of the Pyrenees (1659) 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, Catinat, Boufflers, Vendôme, bound victory to the banners of France; and Vauban girded the kingdom with fortresses. Thus Louis became powerful enough to dictate to the other powers of Europe in all important questions. But the revocation of the edict of Nantes (1685),* his interference in foreign affairs, and particularly 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. (q. v.) On the death of Louis, 1715, whom, as well as 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 Orleans, Law's scheme of finance, the administration of the infamous Dubois, the three years' ministry of Louis, duke of Bourbon, the admirable economy and honest policy of the venerable Fleury, the pernicious influence of the notorious mar-

* See the work of Rulhières on the causes of this event, called *Eclaircissemens historiques sur les Causes de la Révocation de l'Edit de Nantes et sur l'Etat des Protestans en France*, etc., 1788. France lost, particularly in the seven great emigrations of 1666, 1681, 1685, 1688, 1715, 1724, and 1744, hundreds of thousands of industrious subjects, and a great amount of capital, besides experiencing great deterioration in point of morals.

chioness 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 and Corsica, the changes in the colonial 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 suppression of the order of the Jesuits, the family compact of the house of Bourbon, the constantly increasing despotism, which was principally felt in the innumerable *lettres 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 that Maurepas and Vergennes, Turgot and 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 difficult post of minister of finance, and Calonne, who followed him, succeeded for a time in his efforts to conceal the embarrassments 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 millions 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 parliament, had no other consequence than a declaration of the parliament against the abuse of the *lettres de cachet;* upon which the king decreed the suppression of all the parliaments, and the introduction of a court of justice depending on his own will (*cour plénière*). 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 ardor 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-general: at the same time, he received his dismission, the king confiding solely on the personal reputation of the famous Necker, who was now recalled as superintendent 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, 1788), in order to adopt measures relative to the organization of the states-general. The *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 an equal distribution of taxes among all orders, 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* already began to be pronounced at Paris. 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 (q. v.), 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 & Napoleon.* With the changes which time introduces in 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 European continent began in France, 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 French revolution is to be regarded: that it took so very malignant a character was owing to particular circumstances; to the nobility and 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 razed the Bastile, and tore in pieces Maupeou's edict relating to the parliaments; 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 same policy which had produced that deficit would have soon produced another, for prodigality is the companion of despotism. Hatred of oppression roused the people to revolt; they stormed the Bastile; 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 rooted out the ideas of liberty from the hearts of his subjects. It was not merely the men of the last half of the 18th 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 developement of the human mind; or, in other words, of knowledge, which always has a democratic tendency. The favorers 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 reasons; and we have no doubt that Polignac believed 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; Louis XIV and his prodigality, his unprofitable wars and his dragoonades! The real authors of the revolution were an absolute government, despotic ministers, a haughty nobility, rapacious favorites, 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 *roués* (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—Sept. 21, 1792). The national assembly consisted of 616 deputies of the *tiers-état*, 317 of the nobility, and 317 of the clergy. The opposition against the throne itself, 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 23) 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 27), 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, on the refusal of the king to

* The *Mémoires du Duc de Lauzun* describe the profligacy which prevailed before the revolution.

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 Bastile 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-colored national cockade; whereupon, in the session of Aug. 4, 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 *Émigrés*) 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 83 departments; the declaring the 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 the French;* the establishment of 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 on 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 erection 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 of this great drama begins with the decree of the assembly, that the king should not remove more than 20 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, Oct. 1, 1791, by the legislative assembly, after the members of the first had agreed not to allow 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 Provençe and of Artois, prince Condé, with his son and grandson, the dukes of Bourbon and of Enghien, and the marshal Broglio. They assembled French troops of the line at Coblentz and Worms, and were joined by several German princes (Würtemberg, Deuxponts, Baden, Darmstadt and Spires), whose dominions in the French territory of the empire had been incorporated with France in the new organization, 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 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 Pilnitz, by Austria and Prussia (Aug. 27, 1791), to the brothers of the king, was only general and conditional. The assembly proclaimed its peaceable intentions, and de-

clared 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's declaration 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; they continued their levies of royalist corps, under the protection of the German princes and of Russia. When the alliance of Austria and Prussia (concluded at Berlin, Feb. 7, 1792) was known in Paris, the war party gained the ascendency in the legislative assembly, and war was declared against the king of Hungary and Bohemia (April 20, 1792), on the motion of Dumouriez, 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 meditated the overthrow of the throne; their influence predominated in the assembly; their attack on the Tuileries (Aug. 10) decided the victory in favor of the democracy. (See *Petion.*) The unfortunate Louis was suspended by the assembly, as a traitor to the country, and imprisoned, with his family, in the Temple. The popular fury was raised to the highest pitch, 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 Sept., 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 Mentz; the enemies had been compelled to leave the territory of France. Dumouriez had conquered at Jemappe. 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 emigrants taken with arms in their hands, and condemned Louis XVI. (q. v.) 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 stadtholder of Holland. (See *Brissot.*) Thus the empire, England, Prussia, Spain, Holland, Portugal, Naples, Tuscany, 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 terror and despair. The Mountain overthrew 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 (Oct. 16, 1793); the duke of Orleans (Philippe Égalité), and the pious Elizabeth, the magnanimous sister of Louis XVI, soon followed her; all the churches of Paris were shut; the church plate was declared the property of the nation. Nov. 10, the festival of Reason was celebrated in the ancient cathedral of Notre Dame, instead of divine service. The democratic constitution of France was given to the colonies, 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 revenged 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 *mitrailles* of Collot d'Herbois and others (particularly at Lyons, Bordeaux, Nantes, Toulon, &c.). The reign of terror was

finished with the fall of Robespierre, 9th Thermidor (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 (Feb. 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 the service of the convention, on the bloody 13th Vendémiaire (Oct. 5), 1795. On the 26th October, the convention finished its session, and the directory commenced. (See A. C. Thibeaudeau'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, Laréveillère-Lépeaux and Letourneur) restored order in La Vendée, but substituted mandats for assignats (March 11, 1796) without success. This measure only increased the embarrassment of the finances, 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 13 armies of the republic were victorious over the Hanoverians, the English, Dutch, Austrians and Prussians. Tuscany concluded a peace with the French republic Feb. 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 22d 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. The United Provinces (May 16) entered into an offensive and defensive alliance with the republic against England. Austria, England 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. England put forth her whole strength to extend her supremacy on the sea and in both the Indies. Pitt's impracticable system of starvation was not less injurious to other states than to France. The attempts made by the English 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 English, and their attacks on the fleets of Toulon and Brest inflicted an incurable wound on the marine of the republic. Austria, Prussia and Sardinia carried on war principally by means of English 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 Tagliamento, in Italy (April 11, 1796, to March 16, 1797), notwithstanding the successes of the archduke Charles, in Germany, and the retreat of Moreau, 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 England 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 England, who monopolized commerce. Misunderstandings, also, arose between the French and North American republics, and new occasions of war soon sprung 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

England. The Porte declared war against France; the congress 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 reëlected, were placed at the head of the government; but the first consul (Napoleon Bonaparte) alone had the power of appointing and dismissing the counsellors, ministers, ambassadors, and all military and naval officers; he also decided finally in all other affairs of government, the two other consuls (Cambacérès and Le Brun) having only a deliberative voice. The legislative power 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, legislators and tribunes were chosen, not by the people, but by a *senat conservateur*, which consisted of 80 members, at least 40 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 constitution 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 government, when every thing received a new form. He levied an army, and, after ineffectual offers of peace to England and Austria, passed the great St. Bernard, restored the Cisalpine republic, and conquered at Marengo (June 14, 1800); after which Moreau decided the war with Austria 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 England, and to sign the peace of Lunéville 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 between France and Germany. This treaty was followed by those with Naples, Russia, the Ottoman Porte, that of Amiens with England (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 diplomacy of Napoleon governed the continent of Europe for 13 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, and united 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 republic. In France, order, security and tranquillity succeeded 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 establishment of the legion of honor (May 19, 1802) united the nation and the army with the head of the government. When the war with England was renewed (May 18, 1803), and conspiracies spread terror in France, the victories of Napoleon won him the favor of the nation, and enabled him to convert the republic into a hereditary monarchy. (For further information, see the article *Napoleon.*)

3. *History of the Empire of France to the Restoration of the Bourbons and Royalty* (May 18, 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 imperial decree of March 30, 1806, regulated the privileges of the

imperial family, the inheritance, the titles and appanages of its members, and their particular relations to the person of the emperor. The civil list remained as it had been fixed by the constitution of 1791—25,000,000 livres annually. At the same time were established the great officers of the empire, to whom the marshals and court officers belonged; and the supreme imperial tribunal, which was to judge offences of members of the imperial family and of the higher officers of state, high treason, and all crimes against the state or the emperor. The electoral colleges also received a precise organization. The senate remained; but the appointment of the senators, and the right of fixing their number, were 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 presence 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 26) in Milan, and the order of the iron crown was established. Genoa (the Ligurian republic) and the principality of Guastalla 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 government. The emperor of Austria and many German princes acknowledged Napoleon as emperor. The Russian and Swedish *chargés d'affaires* left Paris, and the French ambassadors, Petersburg and Stockholm. Sweden concluded a subsidy treaty with England, and Russia entered into a third coalition with England (April, 1805) against France. The French had already (June 3, 1803) taken possession of Hanover. The emperor of France rigorously prohibited the introduction of English manufactures, wherever his power extended, and threatened England 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 inhabitants (among them the Tyrolese). Napoleon gave to his allies, the rulers of Bavaria and Würtemberg, royal crowns and full sovereignty, which they did not enjoy under the German empire. 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 10,600 square miles, and France obtained a decided predominance over the German princes. The victory of the English 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 cannons and 15,000 men fell into the hands of the victors. Napoleon now changed his system against England. Instructed by repeated experience, that he never could meet the English successfully by sea, he resolved to conquer them by land, and attempted, by the continental system (q. v.), to suppress all intercourse with England. With this view, he abandoned Hanover to Prussia, which involved that power in a war with England. The dynasty of Naples was declared 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 Napoleon, king of Holland; Napoleon's son-in-law, Eugene Beauharnais, whom he had adopted, was created viceroy of Italy, and married to the daughter of the king of Bavaria; Alexander Berthier, the companion in arms of the emperor, was created prince of Neufchatel; Talleyrand, the minister of foreign affairs, prince of Benevento; Bernadotte, 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, Würtemberg and Baden to the federal system of the "great empire," and the incorporation of the electorate of Hanover with Prussia, 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 Tal-

leyrand 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 English minister Fox, and the changes in the situation of affairs, prevented them from resulting favorably. The emperor of Russia refused to ratify the preliminaries adopted by Oubril. The English ambassador Lauderdale was recalled; and, in the autumn of the year 1806, Prussia was seen united with Russia, Sweden and England against France. The Prussian cabinet had been induced to assume a threatening posture towards France by the advices of the offers of France to restore Hanover to England, 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 Friedland cost Prussia half of her territory; three German princes (Hesse-Cassel, Brunswick and Orange) were erased from the catalogue of sovereigns, and two new kings (of Saxony and Westphalia) were created. The confederation of the Rhine was strengthened by the accession of 11 princes; and the accession of Russia and Prussia to the continental system was made the basis of the peace of Tilsit (July 7 and 9, 1807). Austria had remained neutral, awaiting a more favorable 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 of the Pyrenees drew his attention to that country. Portugal was still reluctant to break with England. A French army was therefore marched through Spain, which occupied Portugal without resistance. The royal family fled to Brazil (November, 1807). A family quarrel, of the most indecorous 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 favor. 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 English, to the French troops, seemed, to the cabinet of Vienna, 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 Petersburg, and the progress of Napoleon in the Peninsula, Austria, though she had previously disavowed unfriendly intentions towards France, entered into a new alliance with Great Britain, and resumed hostilities in April, 1809; but the battle of Wagram compelled her to submit to the treaty of Vienna (October 14, 1809), which dismembered her provinces, and distributed them among the neighboring 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 of Austria were still indeed considerable, but 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 England, 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). Even at an earlier period, to give splendor to his 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, reëstablished 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 honor and of the iron crown, that of the three golden fleeces. (See *Fleeces.*) Thus he provided for the splendor of the throne, for the reward of merit, and the gratification of vanity. Meanwhile he directed his attention to all the depart-

ments 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 favorite, but impracticable plans of the emperor, to effect a political and moral regeneration of the Jews throughout Europe. (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 every thing 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 determined the political direction of all the continental powers, and was most injurious to commerce. (See *Continental System*, and *Colonial Products.*) England opposed her orders in council to the decrees 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 been obliged to cede to France Dutch Brabant, Zealand, with the island of Schowen, and the part of Guelders on the left bank of the Waal, for which the attack of the English on Holland, in 1809, had given a pretext. The king of Holland having resigned the crown in favor of his son (July 1, 1810), the kingdom was incorporated with France, by the decree of Rambouillet, July 9, 1810. But England 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 mouths 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 Trianon, 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 English 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 these 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 (see *Reichstadt*) 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 10 first years of his government. The state of things in Spain, the inhabitants of which opposed the French with unexpected firmness, and the daily increasing prospect of an approaching war with the North, which refused to cooperate 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

* At this time, the French empire, under Napoleon, consisted of 130 departments. The territory annexed to the crown, from the commencement of the subjection of the great crown vassals, and the expulsion of the English from France, to the close of the conquests of Napoleon, who nearly restored the ancient empire of Charlemagne, comprised 32 of these departments, of which the German empire had furnished 39, with 12,000,000 inhabitants; the Dutch, 24; Italy, 18; and Spain, 1. The kings of France had conquered 38, the French arms until 1799, 17, and the emperor, 27.

connexion of Joseph, the brother of the emperor, had been elected successor to the throne of Sweden), did not promise favorably for the future. The English also carried on an important commerce with Russia, in colonial produce, through Gothenburg and the ports of the Baltic, of which complaint was made to the courts 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 confident of a declaration of war against England by the U. States, with whom he had been reconciled, and he felt that he might speak the language of offended confidence towards Russia. 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 rolled back from the Kremlin, where Napoleon had his headquarters amidst the smoking ruins of Moscow, across the battle-field of Leipsic, 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 Trachenburg, in Silesia (July 12, 1813), Austria had furnished 262,000 men, Russia, 249,000, Prussia, 277,000, and Sweden, 24,000, destroyed the French empire, and the trophies of 20 years of victory, in 9 months. On March 31, 1814, the allied troops entered Paris, and Alexander declared, in the name of the allied sovereigns, that they would not negotiate with Napoleon Bonaparte, nor 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 guaranty 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 favor of his son, at Fontainebleau. A treaty was concluded the same day ceding to him the island of Elba. (For the histories of this period, see the article *Napoleon, and his Time.*)

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 by the senate. 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 establishment; 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 XVIII openly acknowledged that he owed his throne to the English); 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 an obsolete *noblesse*, opposed to the whole spirit and tendency of modern French politics. The Bourbons were, in fact, in a situation 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 continue long in a constitutional government. During the 15 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 colors to the most extravagant pretensions 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 26 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, Würtemburg, 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 developement of the causes which have produced them would far exceed our limits. Louis XVIII entered Paris, May 3, 1814. A plan of a constitution had already been 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 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 drawn up by the senate. The new constitutional charter was presented to the nation by the king on the 4th of June. (See *Charte Constitutionnelle.*) 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 was required to summon a new one within three 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 colleges, one fifth part to be renewed yearly; to be eligible as a deputy, it was necessary to be 40 years old, and pay 1000 francs of direct taxes. The king appointed the presidents of the electoral colleges, and the president of the chamber of deputies, 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 of their former privileges at court. 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 Venaissin, notwithstanding the protest of the pope (see Moureau's *Réflexions sur les Protestations du Pape Pie VII, rélatives à Avignon et au comté de Venaissin*, 1818); Montbelliard, too, and similar places, remained in its hands. It was also permitted to retain Annecy 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 reorganization of the kingdom. The formation of

a new army was to be effected by recruits. Measures were also taken to retrieve the disordered finances; but 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 25 million francs, and the debts, amounting to 30 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 various police regulations excited the discontent 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 honors conferred 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 England. The army 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 dotations, their pay and their 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 fatal for the royal government than the sudden reäppearance of Napoleon on the coast of France, the 1st of March, 1815. These circumstances explain why, without the existence of an actual conspiracy in favor of Napoleon, the measures taken to oppose his progress were unsuccessful; why the army and a great part of the nation declared for him; and why, after a march of 18 days, which resembled 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 named a new ministry. He declared 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, England 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 making preparations 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). (See *Champ de Mars*, and *de Mai*, and *Cent Jours*.) 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 it to Italy. Napoleon, with his main army, advanced to meet the English and Prussians, under Wellington and Blücher, who were approaching from the Netherlands. After some skirmishes with the outposts on the frontiers, the French attacked the Prussians at Thuin on the Sambre, June 15, and drove them back. On the 16th, Napoleon gained a victory over the Prussians in the plains of Fleurus. (See *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 English, as the way to the United States was shut against him. (See *Napoleon.*) (For the history of the hundred days, see the works of Benjamin Constant, and Fleury de Chaboulon.) The army of the allies had, in the mean time, arrived at Paris, where, on the 3d of July, a military convention was concluded by Blücher and Wellington, with marshal Davoust, according to the articles of which the French army retired behind the Loire, and Paris was surrendered to the troops of the allies. On the 6th, they entered Paris; and, on the following day, Louis XVIII a second time took possession of his throne. Hereupon a new chamber of deputies was convoked, the French army behind the Loire was disbanded, and an order was issued for the formation of a new army. Severe measures were adopted against the adherents of Napoleon. (See *Louis XVIII.*) The condition of France was deplorable; a forced tranquillity prevailed where the armies of the allies were stationed—they occupied almost two thirds of the country—but the other parts of the kingdom were the scene of troubles and bloodshed. The allied powers did not treat France with the same forbearance that they had done the year before. After much negotiation, the treaty of Paris was concluded between them and Louis XVIII (Nov. 20), on the following conditions: the limits of France were to remain as in 1790; France was to surrender four fortresses (Landau, Philippeville, Sarre-Louis and Marienburg), the duchy of Bouillon, that part of the department of the Lower Rhine situated on the left bank of the Lauter, a part of the district of Gex, and the part of Savoy which had been left to France in 1814 (in all, 434,000 inhabitants); she was bound not to erect any fortress within three leagues of Basle, in the place of the fortifications of Hüningen, which had been demolished immediately after its surrender; renounced her claims to the principality of Monaco; agreed to pay to the allies a contribution of 700 million francs, to give up 17 citadels for from three to five years, and to support 150,000 troops of the allies within her frontiers. The French government was further bound to satisfy the lawful claims of individuals, corporations or institutions in the countries of the allies, and to restore all the treasures of literature and art which the French had carried off from conquered countries. The last article was executed while the foreign troops were in Paris. Finally, France agreed to abolish the slave-trade unconditionally. This treaty was signed by Richelieu, the president of the new ministry, appointed in September, 1815. The nation was discontented; but the spirit of reaction, which was perceived in the *chambre introuvable* (q. v.), silenced all opposition. The law of the 29th of October, 1815, granted to the government the extraordinary power of confining all persons suspected of designs against the king and the state, without previous conviction by a judicial tribunal, and often without publicity. Finally, the two chambers passed the law of amnesty proposed by the king (January 6, 1816), by which all those who had voted for the death of Louis XVI, or had accepted offices from Napoleon during the hundred days, were forever banished from the kingdom. This victory of the royalists was succeeded by the dismissal of several thousand judges and other officers. Yet the ministers and other officers were not royal enough for the ultra royalists (see *Ultra*), who considered the government of France in 1789 as the only legitimate one. All events posterior to that period were to them a series of crimes, and every individual who had been concerned in them a criminal. Those who had never contaminated themselves by any participation in the revolution, but had opposed it from the first constitution, they called *plein-purs*, or true Frenchmen; those who had been in favor of the first assembly, but had adhered firmly to the king, were 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 the opposite of the ultras considered every thing which had happened in France for the preceding 25 years, as belonging to a period of great national developement, to which it was the duty 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. Thus each party defended its own cause as the cause of justice, and accused the other party of treason. The attacks of the ultras in the two chambers upon the ministers, finally led to the decisive step of the 5th of September (see *Louis XVIII*), when the king dissolved the chamber of deputies. The new chamber was opened Nov. 4, 1816,

with a speech from the king, which described in plain terms the unfavorable condition of France. 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 independents and liberals 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 (see *Laws of Exception*), by which the complete operation of the charter was prevented. Meanwhile, the ultras lost ground, 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 the ultras wished to engage 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 24 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 Baring and of Hope, notwithstanding more favorable 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 favor 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 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 Russia and Wellington were agreed on this point, the other commissioners were obliged to accept, in payment of these 1390 millions, a rent of 16 millions and 40,000 francs, which, at the market price, corresponded to a capital of 275 million francs—about the seventh part of their lawful claims. A rent of 3 millions was granted to England 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 (see *Quadruple Alliance*), and concurred 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 developement of the constitutional system, and against the retaining of the existing mode of election. A schism 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 Dessoles (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 *Coté droit*), this ministry was overthrown the 19th of November, 1819. Dessoles, St. Cyr and Louis, who defended the liberal construction of the charter, resigned; Pasquier, Latour-Maubourg and Roy succeeded

them, and Decazes became prime minister. Decazes, with De Serre and Portalis, concurred in 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 Lainé), 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 continual disputes of the liberal journals (the *Minerve Française*, 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 Dunoyer, wrote for the liberals; Bonald, Fiévée and Châteaubriand (q. v.) 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 *prevôtal* 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 assizes. The *droit d'aubaine* (see *Aubaine*), 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 *pères de la foi*, endeavored to undermine the constitutional system by means of missions and schools) was going on, the majority of the nation desired a pure constitutional ministry, which should fortify the charter by laws, and national institutions resembling it in spirit, and thus frustrate the intrigues of the ultras, who aimed at the restoration of the ancient feudal system—the three estates with their privileges, the parliaments and the *lettres de cachet*. A *gouvernement occulte* was maintained, under the direction of baron Vitrolles, to forward the views of the ultras. Some officers of state abused their power; the administration of criminal justice suffered gross abuses, and was by no means in accordance with the provisions of the charter, in favor of personal liberty. (See Berton's *Observations critiques sur la Procedure criminelle d'après le Code qui régit la France*, and Berenger, *De la Justice criminelle en France*, Paris, 1818.) The charter had abolished the penalty of confiscation; but the enormous fines, 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 banishment 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 not permitted to elect its officers, was not every where 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'État des Protestans en France depuis le seizième Siècle jusqu'à nos Jours*, 1818, we find ourselves transported back to the times of the dragoonades. Government at last put a stop to these 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 prefectures and the most important mayor-

* These violences did not cease until March, 1819, when a great number of the inhabitants of the Cevennes presented themselves at the city of Nismes, with the declaration, "that 30,000 men are ready to descend from the mountains with the weapons of despair, if the safety of their brethren require it." The Methodists in England exerted themselves, at that time, in favor of the French Protestants.

alties! 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 mostly in the hands of a caste, which remembered its lost privileges, and hated the new order of things. 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 unison 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 accordance 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 leaned towards the views of the centre, or moderate royalists, and was supported by the majority of the extreme right. The election laws were found too favorable to the liberal party, and the ministry therefore proposed a new election law, for the purpose of giving the richest land-holders the preponderance 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 two parties attacked each other with reciprocal accusations, and Decazes, the president of the ministry, had already proposed several bills (*projets*), 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 *Louvel*), astonished the whole nation, and drew forth the most virulent 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. (q. v.) 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 Siméon as minister 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 Deserre, and (after 1822) by the talents of Villèle. The first law of exception (*loi sur la liberté individuelle*) of 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 orators of the opposition in vain maintained that the existing laws contained sufficient provisions against seditious designs. The second law of exception, of March 31, 1820 (*loi sur la publication des journaux, écrits périodiques, desseins*, &c.), restoring the censorship, was contested with still greater violence. Both parties were dissatisfied with it. The left side reminded 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 *charte* (thence called the *doctrinaires*), had already deserted the ministry before the resignation of Decazes, and coöperated more or less with the left side. On this account, the centre was now distinguished into the left centre and the right centre; the latter being occupied by moderate royalists of the ministerial party. But Deserre and Pasquier still com-

manded a majority of votes in both chambers. 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 rigor against the liberal papers, these were deprived of much of their influence on the approaching elections. The new law of election, June 29, 1820, was carried, after the most violent opposition on the part of the *doctrinaires* and the liberals, in both chambers. (See *Elections.*) The first consequence of this new law of election was, that in 1820, of 220 new deputies, only about 30 were liberals; in 1821, two thirds of the 87 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 dismissions, 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 pretended 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 imprisonment: the rest were acquitted. The exaggerated fears of the government were shown in the case of the *conspiration de l'Est*, all the persons accused being acquitted. On the opening of the session of 1820 (from Dec. 19, 1820, to July 31, 1821), Lainé, De Villèle (q. v.) and Corbière (q. v.) were appointed (Dec. 21), 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 ministers. Count Donnadieu, Delalot and count Vaublanc headed this opposition. Both parties seemed to unite with equal zeal for the overthrow of the ministry. The left side principally attacked the influence 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 a reformation of morals produced by a 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 Benj. Constant once expressed 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. Villèle and Corbière, therefore, gave in their resignation, the consequence of which was the alienation of the right side from the ministry. The ministers were, notwithstanding, so confident of their stability, that they hastened the opening of the session of 1821, for the purpose of fixing the budget of 1822, before the close of the year, as it was then usual to grant the supplies for six months of the ensuing 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 mem-

bers of the right side united themselves more closely, 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 congress at Laybach. (q. v.) The address of the deputies 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 session 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 combined attack of both parties, and not daring to dissolve 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 Belluno (Victor), of war, Corbière, of the interior, the marquis de Clermont-Tonnère, of the marine, and Villèle, of finance. Ultra royalism was now triumphant; the right side seemed satisfied, and the left formed but a feeble opposition. The new ministry immediately withdrew the proposition for a continuation 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 democratic party was displayed in the provinces. In 1821, a conspiracy in favor 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 troubles in Paris; and several seditious 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 intellectual philosophy. At the same time, some of the departments were disturbed by numerous fires. 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 aristocracy also prevailed; and they resolved that no peer could be arrested on account of civil suits, although all Frenchmen were pronounced 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 31 out of 80 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 budget of 1823. The talents of this minister 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*. But the ultras of the right side were dissatisfied with his moderation. He neither did all that they wished, nor did he act with sufficient promptitude for them. Villèle, 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, understood 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 England, 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, which only delayed the discussion 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 51 deputies, who had voted against the ministry, 45, and among them Benj. Constant, had not been reëlected; and the opposition was entirely without influence. Villèle, who did not unconditionally favor the war, not being able to agree with the duke de Montmorency, minister of foreign affairs, concerning the note to be sent to the Spanish government, had the good fortune to obtain the approbation of the king; upon which the duke de Montmorency resigned his place, and was succeeded by the viscount de Châteaubriand. 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 dotation of the chamber of peers and deputies, 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 100 millions. The peace party, in both chambers, 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 Bourbons), 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 national guard refusing to act, was 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: 62 members presented a formal protest against the exclusion of Manuel. There was now only a silent opposition in the right centre in favor of peace; but the extreme right, or the party of Labourdonnaye, continued to attack Villèle, the president of the ministerial council, and Labourdonnaye publicly declared his dissatisfaction with the *charte*, 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, and the result (see *Spain in* 1823) was the triumph of the Bourbons; 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 Damas had succeeded the duke of Belluno, as minister of war, in the beginning of the war. The session of 1824 was opened March 23; the number of liberals was reduced from 110 to 17. 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 (see *Septennial Elections*) 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, Villèle brought forward a proposal to reduce the *rentes* from 5 per cent. to 3 per cent., which was adopted by the deputies, but rejected (3d June) by the peers. Châteaubriand (q. v.), for refusing to defend the bill, was deprived of the portfolio of foreign affairs, and became a violent opponent of government. The other measures of the ministry were carried, in both houses, by a

great majority; and the motion of Labourdonnaye for the indemnification of the emigrants was rejected. Soon after the close of this session (August 4), the government renewed the censorship of the public journals, chiefly through the influence of count Frayssinous, bishop of Hermopolis, and grand-master of the university, who had been intrusted with the new ministry of public worship. Louis XVIII (q. v.) died the 16th September, and his brother (see *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-Tonnère was appointed minister of war; the duke de Doudeauville, minister of the royal palace; and baron Damas, minister of foreign affairs. Villèle secured the confidence of the king, by his prudent administration, and by his concessions to the aristocratical and theocratical spirit. Châteaubriand 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 Villèle 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. A law was also passed punishing sacrilege (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 *charte*. The king had already acknowledged the independence of Hayti (q. v.), by the 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 31 new peers. The bill establishing the right of primogeniture and entails (*substitutions*) was passed, however, only after striking out the provisions on the former point, in which the nation discerned the foundation of a new aristocracy, and the destruction of the 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. (q. v.) 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 enormous expense of the campaign, stated in the American Annual Reg. at 397,000,000 fr.; in the German Con. Lex. at 207,827,000. Villèle, on the first report of the business, had Ouvrard arrested; but he soon repented this step, when Ouvrard was tried by the *cour royale*, and then by the peers, because the more the matter was investigated, the more fraud appeared, 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 *Ultramontanists*.) 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 1682.

On Lafayette's return from the U. States, 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 *Constitutionnel* and *Courrier Français*, two of the best liberal journals. Villèle, 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 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 integrant part of the nation. The state of Portugal, South America and Greece contributed to increase the agitation. The session of 1827 was opened Dec. 12, 1826. Damas, minister of foreign affairs, informed the chamber that all the continental powers had endeavored to prevent the interference of Spain in the affairs of Portugal; that France had coöperated with them, had withdrawn her ambassador from Madrid, and had entered into arrangements with England 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 proposed by the ministers was adopted by a majority of 233 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-Perrier, and two other members, declared themselves ready to impeach the ministers, during the discussion of the budget for 1828. Villèle, 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 983,940,350 francs. The excess of income over this expenditure was 5,119,365 francs. Villèle congratulated the nation that there should be an excess, after many extraordinary expenses. M. Hyde de Neuville, formerly French minister in the U. States, having accused the French ambassador at Madrid of connivance in the Spanish invasion of Portugal, his own name was immediately struck from the roll of *ambassadeurs en disponibilité*. But the rigorous censorship of the press, established by an ordinance of June 24, was much more obnoxious than any previous measures of the ministry. The opposition papers sometimes appeared with whole columns blank; a thousand ingenious contrivances were invented for expressing free opinion, and the liberal spirit became the more active in other means of attack. Some excitement was produced, about this time, by the assault of the marquis de Maubreuil 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 employed 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 months. 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 Lafitte, was a new cause of irritation. Lafitte was refused permission to remove the body to his house in Paris, and to bury it from thence; he therefore proposed, 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 Roule, 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 unharnessed the horses, and drew it themselves. New bodies of *gendarmes* now appeared in one of the boulevards, with another funeral 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 at the grave. The immense multitude 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.

Villèle 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 because 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, Lafitte, Casimir-Perrier, Benj. Constant, De Schonen, Ternaux, Royer-Collard and baron Louis. The same result 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 50 persons were killed by the *gendarmes*.

The ordinance which had dissolved the chamber had been accompanied by another, dated November 5, 1827, creating 76 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 Soult, who could be considered entitled to the honor by past services. January 4, 1828, when the ministry was partially dissolved, the names of Villèle, Peyronnet and Corbière were added to the number. The *seventh ministry* was now formed. Count de la Ferronaye, late ambassador to St. Petersburg, was created minister of foreign affairs; count Portalis, whose report against the Jesuits was not forgotten by the liberals, keeper of the seals and minister 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 its head, as director-general of the customs. M. de Chabrol, 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 Frayssinous, minister of ecclesiastical affairs; but the department of public instruction was taken from this minister, and raised to a separate branch of administration, to which M. de Vatismenil 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 30 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 Frayssinous, the two members of the Villèle ministry, who had remained in the cabinet, resigned their posts, and were succeeded by Hyde de Neuville and Feutrier, bishop of Beauvais. Several illegal returns of deputies had been set aside, and the liberal party gained new strength by supplying the vacancies. A proposition of M. de Conny, 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 ordinance, directing that no person should thenceforth 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 Catholic religion; the bishop of Toulouse even announced his intention of opposing it in his diocese, but the pope prevailed upon the clergy to submit. The session was closed August 18; and reflecting men were of opinion, that this ministry could not probably stand. We have seen that they had little unquestionable support in the chamber. The ultra-royalists and Jesuits were still more violent against the present administration, than against Villèle's. The left side by no means entertained a full confidence in it; and the court was under the influence of the clergy, which seemed to abhor every thing liberal. In general, it must be said that the ministry had no strong interest for its foundation.

During this year (1828), the French troops returned from Spain, and formed a part of the expedition, consisting of from 13 to 14,000 men, which sailed for the Morea under general Maison, in the month of August, for the purpose of delivering Greece from the hands of the Turks. The Morea was soon occupied (see *Greece*) by the French forces. The ministry determined not to remove any officer for his political opinions. This truly liberal measure offended the warm partisans, and probably contributed, with the other causes above mentioned, to their downfall.

The session of 1829 began January 27. The most important subject touched on in the king's speech, was the promise to propose laws "for placing the municipal and departmental organization in harmony with the existing institutions"—the want of which had been felt ever since the restoration of the Bourbons. Royer-Collard was again elected president of the deputies. Martignac, the minister of the interior, presented, early in February, two *projets*; one regulating the organization of the *communes*; the other, respecting the councils of the departments and *arrondissements*. After a long discussion, the ministers withdrew the *projets*—a measure which undoubtedly hastened their approaching overthrow. The discussion of these important points of government exposed the ministry to the assaults of the right and left sides at the same time. An unpopular law was passed by a majority of 90 votes, in the chamber of deputies, providing pensions for such peers as had not 30,000 francs clear income. These pensions were made unalienable *rentes*, and transmissible to the successor to a peerage, only in the event of his not having a clear revenue of 30,000 francs. It appeared, also, that 50,000,000 francs had been distributed in the chamber of peers, in conformity with the act of 1825, for indemnifying the emigrants. On this occasion, the liberal journals attacked the ministry with violence. Before the close of the session, M. Portalis had been appointed minister of foreign affairs, and M. Bourdeau keeper of the seals. The ministry became more and more embarrassed, as the session advanced; the supplies which they asked for were not granted. A few days after the prorogation of the chamber, the ministry was dissolved. M. Portalis had kept open for himself the office of first president of the court of cassation, the highest judicial station in France. Messrs. Bourdeau and Vatismenil received neither decorations, pensions, nor even the usual title of minister of state.

On August 9, 1829, the following appointments were announced: prince Polignac, minister of foreign affairs; M. Courvoisier, keeper of the seals and minister of justice; count Bourmont, minister of war; count Rigny, minister of marine and the colonies; count de la Bourdonnaye, minister of the interior; baron de Montbel, minister of ecclesiastical affairs and public instruction; count Chabrol de Crousol, minister of finance. The departments of commerce and manufactures were suppressed. Rigny, the commander of the French fleet at Navarino, declined the offered port-folio, 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, declared for Louis XVIII, had again taken office under Napoleon, whom he deserted on 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 (for whom it is thought that the place of president of the council of ministers had been left vacant during the last administration) was completely identified with the ancient *régime*. Attached, from his very birth, to the person and fortunes of Charles X, Polignac is, 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 English influence, and particularly to that of Wellington; and, as the prince had no redeeming qualities, the majority of the nation at once pronounced against him. M. de la Bourdonnaye, 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, how it was to procure a majority in the chamber. La Bourdonnaye proposed to try the dangerous policy of Villèle, viz. 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 Montbel, who had been elected a member of the chamber by the *congreganistes* of Toulouse, was transferred to the department of the interior, and M. Ranville, distinguished at Caen among the agents of the reäction 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 endeavored 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 do not contain many aristocratical elements. Without the immense wealth and patronage of the British peerage, they are not able to exercise any great influence; they are obliged to follow, not lead the nation. (See *Nobility*, *Peers*.) One of the measures of the late dynasty, which had recoiled upon themselves, was the allowing only those to vote, and to be eligible to office, who paid the highest taxes. (See *Election*.) 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 expect from 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 want? It is not necessary, in this country, 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 late 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. We are far from denying his guilt, but we think that the Bourbons must, sooner or later, have come to open war with the principles of the nation. All ways of incorporating liberal principles with the notions of the royalists had been 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 dey had also struck the French consul at a public audience, on receiving an answer in the negative to his question whether the debt abovementioned, 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 doubt your coöperation in 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, in 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 reëlected president. When the *doyen d'âge* (see *Dean*) gave up the chair, he addressed the president by the term *citizen*, which excited a great sensation. On the 18th of March, the usual deputation 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. "Sire," 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 his intentions. The peers had answered on the 10th, by a mere echo of the speech from the throne. Châteaubriand's discourse on this speech was a bold attack on the ministers. The two chambers were immediately convoked for the next day (the 19th), to receive a 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 royalist journals exulted in the measure, 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 refusal of printers to lend their presses to papers 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. 221 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 honorable 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 many of the most servile partisans judges, prosecuted the journals (as the *Globe*, *National*, &c.), and men of letters, many of whom were national favorites, and continued, though in the minority, to treat their opponents as traitors, and deliberately insulted the nation. April 1, count Villèle 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 dey 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 *drapeau 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 absent at Algiers, the military preparations 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 Duperre, the commander of the fleet. April 20, 1830, the *Moniteur* stated the reasons for the war to be, that the dey had raised the ancient tribute of 17,000 francs per annum to 60,000 francs, and, finally, to 200,000 francs; that, though this sum was duly paid from 1820 to 1826, the dey had been unfavorable to the French interest, insulted the French flag, and struck the French consul, &c. May 10, the army, consisting of 37,577 infantry, and 4000 horse, embarked at Toulon, and the fleet, consisting of 97 vessels, of which 11 were ships of the line and 24 frigates, set sail. June 14, at four o'clock, the army began to disembark at Sidi Ferrajh, on the coast of Africa.

May 17, the royal ordinance dissolving the chamber appeared in the *Moniteur*. 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, hasten 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 indicated a strong majority against the ministry, so that, in the beginning of July,

* Algiers surrendered July 5. According to a telegraphic despatch to the minister of marine (Toulon, July 20, 1830), the treasure found in Algiers amounted to 90,000,000 of francs in money, and 10,000,000 in gold and silver bullion and plate. There were besides 20 or 30,000,000 not inventoried. The *Journal du Commerce* subsequently stated the amount obtained at 43,000,000. It appears that the army landed precisely at the place pointed out by Mr. Shaler, in his Sketches of Algiers. We subjoin the passage, in Mr. Shaler's work, in which he lays down the plan of a campaign against Algiers: "The several expeditions against Algiers, where land forces have been employed, have landed in the bay eastward of the city, which is evidently an error, and discovers an unpardonable ignorance of the coast, and topography of the country; for all their means of defence are concentrated there. But it is obvious that any force whatever might be landed in the fine bay of Sidi Ferrajh without opposition, whence, by a single march, they might arrive upon the heights which command the castle *del Emperador*, where, as nothing could prevent an approach to the foot of its walls, they might be scaled, or breached by a mine, in a short time. This position being mastered, batteries might be established on a height commanding the citadel, which is indicated by two cylindrical ruins of windmills, and where are the ruins of a fortress, which was called *Stau*, which the jealous fears of this government caused to be destroyed, for the reasons here alleged, that it commanded the citadel, and, consequently, the city. The fleet, which had landed the troops, would, by this time, appear in the bay to distract their attention, when Algiers must either surrender at discretion or be taken by storm."

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, those 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 victory of his army in Africa, the news of which 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 conflagrations 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 monster who has burned our houses. Hang him, hang him!"

Of the 221 who voted for the answer of the chamber, 220 were reëlected. The liberals in the new chamber were 270, the ministerial members 145, and 15 were undecided. In consequence of this result, the ministers made a "report to the king" (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 stand, 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 a 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 three ordinances, one dissolving the chamber, "according to the 50th article of the charter" (this was plainly annulling the election, not dissolving the chamber, because the new chamber had not been organized); a second, suspending 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 favorable returns. The *Constitutionnel*, the *National*, *Courrier Français*, *Temps*, *Globe*, *Journal de Commerce*, *Messager*, *Figaro*, and others, all liberal papers, resolved to appear without the authorization of government, required by the new ordinance. The *Journal des Débats* refused to unite in this measure. An opinion of eminent lawyers was published, declaring that the property in a journal was like any other 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 26, the bank refused to discount bills, and all the manufacturers discharged their workmen, which, of

course, increased the discontent. The revolution, 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 tricolored flag was displayed on several buildings. The battle began in the place de Grève; the Hôtel 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 missiles, and arms of every description were seized, wherever they could be found; the women attended the wounded. The Hôtel de Ville had remained in the hands of the citizens on the evening of the 28th. The Tuileries and the 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 the attack on the Louvre, from which the Swiss 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 8000 persons were killed and wounded. The number of troops engaged was 17,200. The people fought heroically throughout. Amidst the fire of musketry, several deputies, viz., general Gerard, count Lobau, M. Lafitte, M. Casimir-Perrier and Mauguin, went to marshal Marmont. Lafitte entreated him to stop the carnage, and declared him personally responsible for it. Marmont said he felt with them, 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 invited the duke of Orleans to become lieutenant-general of the kingdom. At noon of the same day, Louis Philippe d'Orleans issued a proclamation, declaring that he had hastened to Paris, wearing the "glorious colors" 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 commissaries, 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 Lobau A. de Puyraveau and Mauguin 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 organization, 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 endeavoring 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 and manfully defended them to death. It is in this respect a moral revolution, like that of the Americans, fighting for principles. The

* This general has promised an explanation of his conduct during the memorable *three days*.

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 to the minds of the people a world of old associations. M. Rouget de Lisle received, in consequence, a pension of 1500 francs from the private purse of the duke of Orleans. (See *Ça Ira*, and *Marseilles Hymn*.) In the departments, events took place similar to those in Paris, &c., and the people were every where 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 Maison 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 Antoine, was placed in the hands of the lieutenant-general. The abdication, however, was made in favor 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 acted, 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 it was voted to invite the duke of Orleans to become king of the French on condition of his accepting these changes; the vote stood 219 in favor, 33 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 chamber. 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 these measures.

The *Moniteur* of August 12 contained the names of the new ministry, as follows: foreign affairs, count de Molé; war, general Gerard; finance, baron Louis; interior, Guizot; marine, general Sebastiani (q. v.); keeper of the seals and minister of justice, Dupont-de l'Eure; 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-Perrier were also appointed ministers of state, without special departments.—The count de Molé was minister of justice in 1813, and minister of the marine in 1817, and is an admirer of the institutions of England. General Gerard served with distinction in the French armies, from the early campaigns of the revolution to the final overthrow of Napoleon. Baron Louis, who is a man of large landed property, and, therefore, deeply interested in the preservation of order and good government, was considered one of the most honest and skilful ministers of Louis XVIII, and he enjoys the respect of all parties. The duke de Broglie is a statesman of distinguished merit; he is considered the chief of the political *littéraires* of Paris, and is well known by his essays in the *Revue Encyclopédique*, and, more particularly, by an admirable paper in that work on the criminal law of Europe, in which he has displayed equal good sense and humanity. M. de Broglie (q. v.) was also a regular contributor to *Le Globe*, a journal of great influence among the constitutional royalists. M. Guizot (q. v.) is a literary man of much reputation, and is said to have a general talent for business.

The omission to fix the requisites for electors, in the new charter (leaving the qualifications to be settled by an ordinary law, liable to alteration and repeal), also the provision for revising the instrument itself during the session of 1831, will, probably, give rise to warm party contentions. The spirit of order, 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 there merely as a private person. Some individuals, including M. Châteaubriand, proposed to acknowledge the duke of Bordeaux, as

king, on the ground of expediency. But the policy of giving the crown to a minor in such troubled times, and to one who could only regard the privileges of the people as wrongfully wrested from his royal authority, would seem to be hardly deserving of discussion. The abdication of Charles X, in favor of his grandson, cannot give him a right to the throne in the eyes of the adherents of legitimacy, as this would be an acknowledgment, on their part, of the right of the people to extort from the sovereign a resignation of the crown. The reasons which justify the expulsion of Charles equally justify that of his whole family. The claims of Napoleon II would seem to stand on somewhat better ground, as his father, who had received the hereditary crown by the votes of the nation, abdicated it in his favor, and the subsequent establishment of the Bourbons was effected by foreign arms, and was not in accordance with the will of the nation. But all such claims are superseded when the nation, for whose benefit government is instituted, interferes by a revolution, and changes the established order. Some persons were in favor of a republic; but we need not discuss here the adaptation of such a government to France in its present state. The stability of the Orleans family on the throne has been doubted, destitute as it is of the ancient prerogatives and *prestige* of royalty. But we conceive that it is supported by the only principle which can now give stability to the hereditary succession of the throne in any family—the conviction of the people of the necessity of such an establishment for the good order of the nation, as few reflecting men, at the present day, will be disposed to defend hereditary monarchy in the abstract. The revolution of 1830 in France has been hailed with delight by the civilized world, and it is of the greatest importance for mankind, that Liberty should become established in that country on a solid basis. May her richest blessings be granted to a nation which has shown itself so deserving of them. May the parties of France never forget that, however important the forms of government are, there are things still more important—those for which governments are instituted, and the security of which is their chief object—we mean, order and justice. As the affairs of France, whatever turn they may take, must be of the highest interest, we propose to continue the account of them at the close of the last volume of this work.

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 that revolution cannot be understood without an exposition, at some length, of the state of things which preceded it.

France 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 Frankish kings, and that, among the Franks, the principles 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 proprietors, and 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 987, 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 favorable 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 domains of the crown, partly with their own private domains, they acquired not merely a nominal supremacy (as was the case with the German emperors over the ancient duchies), but an actual sovereignty. These changes had little effect on the liberties of the people, because these were already lost under the feudal system. With the consolidation of the great fiefs, the dignity of princes of the kingdom became extinct. To these succeeded the princes of the blood-royal, and, at a later period, some foreign princes (in 1505, Engelbert of Cleves was made duke of Nevers and peer of France). Finally, in the middle of the 16th century, the principal families of the lower nobility were invested with the dignities of peers and dukes, without, however, becoming, on this account, equal to the ancient peers of the realm. The

first of these was the baron de Montmorency. In 1789, the secular peerage consisted of 44 members, of whom the dukes of Uzes (Crussol, 1572) were the oldest, and the dukes of Choiseul and of Coigny (1787) were the most recently created. The six ecclesiastical peers, however, had held the peerage from the earliest times. They were the archbishop of Rheims, and the five bishops of the family duchy of Hugh Capet. The secular peers (among whom the archbishop of Paris had a place, from 1690, as duke of St. Cloud) merely formed the highest class of the lower nobility; but there were six families (branches of the houses of Lorraine and Savoy, Grimaldi, Rohan, Tremouille and Latour d'Auvergne, residing in France) who preserved the rank of sovereign princes. The first estate of the realm was the clergy, which, if it did not enjoy the rank, enjoyed all the exemptions of the nobility from taxes and most of the public burdens, and had the first voice in the states-general. A distinction was made between the clergy of ancient France, which consisted of 16 archbishops and 100 bishops, with the priests and monasteries under their jurisdiction, on one side, and the foreign clergy (or those of the provinces added to France since the reign of Henry II), consisting of two archbishops and 22 bishops, on the other. The revenue of the clergy was estimated by Necker at 130,000,000 annually. The amount of their real estate was to that of the lay proprietors in the proportion of 1 : 5¾. The priests who actually performed spiritual services, and formed the most respectable part of the clergy, received about 40 or 45,000,000 of the 130,000,000 revenue. The abbeys were assigned by the king, partly to *abbés commendataires* (q. v.), partly to actual monastic superiors. Those abbeys only were excepted which were the chief seats of an order, as the great Carthusian monastery at Grenoble, the seat of the Cistercians at Citeaux, near Dijon, that of the Premonstratenses at Premontré, near Soissons, &c. Of the former kind, there were 225, some of which had very large revenues. The *abbé commendataire* received one third of the whole revenue of the monastery, without being obliged to reside in it, or to follow the monastic discipline, which the prior was obliged to observe. Abbeys of this sort formed pensions for the younger sons of the nobility, only the least valuable ones being sometimes bestowed on learned men. The income of the *abbés commendataires* (therefore one third of the revenues of these monasteries) is stated, in the *Almanach Royal* of 1789, at about 8,000,000. The regular abbeys in France were 368, of which 115 were monasteries, and 253 nunneries. From the rich revenues of these institutions, the clergy, it is true, contributed something towards defraying the expenses of the state. Besides the tithe, established under Francis I (called, from the first commissioner, the *décime Paschaline*), which, however, bore no proportion to the real amount of the income, the clergy made certain grants every five years, called the *dons gratuits ordinaires*, of from 15,000,000 to 18,000,000, with occasional grants (*dons gratuits extraordinaires*), when required by the government, in the shape of loans, on long credit, and not bearing interest. Government used to anticipate these grants by loans. In 1789, it had contracted, in this way, a debt of 136,000,000, the interest and gradual redemption of which were provided for by taxes on the holders of the property of the church. The *foreign clergy*, so called, in some provinces, paid the regular taxes. The total amount of taxes annually paid by the whole clergy, is stated by Necker, in his *Administration des Finances*, I, 127, to be 11,000,000. This sum, however, did not go into the royal treasury, but was employed to pay the interest of the debt above mentioned, and to sink the debt itself. Besides the amount paid by the foreign clergy, the clergy did not contribute more than 3,500,000, annually, to the treasury. Long before the revolution, the respect for the clergy, among the lower classes of the people, had considerably decreased. The number of monks had sunk, within 50 years, from 80,000 to 20,000, and the higher clergy had fallen into disrepute in consequence of their prodigality and dissoluteness. The signification of the word *noblesse* was very different according as it was employed to comprehend all those who had a claim to the privileges of nobility by law, or only those who were really descended from the old hereditary nobility. As there were about 4000 offices in the kingdom, which conferred on their holders, either immediately or after 20 years' service, the privileges of nobility (generally hereditary), and as letters of nobility were frequently granted, the number of the nobles was much increased every year. Not only the offices of minister, counsellor of state, counsellor of the parliament of Paris, and of some other parliaments, of the court of accounts, or of the court of taxes, of high-bailiffs, but even the office of coun-

sellor, in some cities, the title of royal secretary, and the post of first *huissier* of the parliament of Paris, conferred the privileges of nobility. These places were bought, and, after being held for the requisite period, were sold again. But the old nobility did not treat these *novi homines* as their equals. The *noblesse de robe* was not acknowledged in society. Notwithstanding the laws, says Montlosier, *Tout cela resta dans la roture.* He who could prove a noble descent of two or three centuries was something; those only, the origin of whose nobility could not be traced, or was merely legendary, were considered perfect; as was the case with the *premiers barons de chrétienté*, the Montmorencys. The old nobility only had the right, by birth, of being presented at court; and, as late as the reign of Louis XVI, a royal ordinance provided that no person should be appointed to the office of sub-lieutenant, who could not prove a noble descent of at least four generations. The post of *colonel en second* was created in every regiment, for the higher nobility, so that young men of this class began their career at a point where the others could only arrive after long service. Only a few years before the revolution, it was also asserted, that ecclesiastical benefices (those of parish priests only excepted) could be bestowed only on noblemen. The titles of nobility were *duke, count, marquis, viscount, baron;* but the four last, which were principally derived from estates, did not designate any real difference of rank. The ducal title alone conferred some privileges at court, as, for instance, the duchesses were allowed to sit on stools in the presence of the queen. There were three kinds of dukes; *ducs et pairs, ducs héréditaires non pairs* (15 in 1789), and *ducs à brevets et brevets d'honneur*, 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 the common land-tax (*taille*), military service, the *corvées* (q. v.), 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, as the keeping of pigeons, owning of rabbit-warrens, &c., had become intolerably oppressive to the peasants. In some parts of the country, villenage, 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 tithe 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 tithes 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 2,609,000,000, 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 Moheau, was as 1 to 250; but this proportion varied in different provinces. But although the nobility, as owners of the soil, and as members 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 necessaries 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 administration, 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 thirtieths of the nation. Sièyes, therefore, in his work *Qu'est ce que le Tiers-État?* published 1789 (one of those works which have acquired importance in history), could justly introduce the following series of ques-

tions and answers: 1. *Qu'est ce que le tiers-état? Tout!* 2. *Qu'a-t-il été jusqu'à présent dans l'ordre politique? Rien!* 3. *Que demande-t-il? Être quelque chose!* These few phrases contain the whole secret of the revolution of 1789, and of the struggles of parties until the revolution of 1830; for it was not the power and consolidation of the crown, but the reëstablishment of the same 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 humblest artisans to the wealthiest merchants and the most distinguished scholars. To this class also belonged, as far as their social connexions 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 raised. In the second place, 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 endeavored 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, in opposition 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 Français*, Brussels, 1775, 2 vols. 4to, by Aubry, Mey and Maultrot, is in reality only a learned argument against the absolute power of the king, and in favor 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 right to make remonstrances against them 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 Staël devoted to this question a whole chapter of her Considerations on the French Revolution; 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. Monthion, chancellor of the count d'Artois, refuted Calonne's assertions as late as 1796, in a work published in London—*Rapport à Sa Maj. Louis XVIII.* 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 common to all the German tribes; that at a later period the feudal system contained some faint traces of them; and that the states-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 disconnected and jarring fragments, the relics 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 favor 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 contrary, by throwing obstacles in the way of the regular action of the administration, they often rendered the irregular exercise of power necessary. All branches of government, the executive, legislative and judicial, were so confusedly entangled, that neither could acquire its free action; and yet there were so many insulated points, that all unity of government was destroyed, and the exertions of the best intentioned ministers were rendered ineffectual.

A. In the constitution of the estates, the provincial states, which existed in some of the provinces, must be distinguished from the states-general of the realm. The former originated in the times when the great feudal princes in France were almost as independent as the princes of the German empire; and they were preserved in Artois, Burgundy, Béarn, Brittany and Languedoc, when those fiefs were united to the crown. They were composed of the clergy, nobility and cities; but they had no power, except to distribute the taxes in the province, and to determine how they should be raised. This gave rise to different systems of taxation in different provinces, which not only increased the expenses of the administration, but were also attended with many other disadvantages. This diversity in the financial 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 fermes;* 2. *reputées étrangères;* and 3. *traités comme étrangères*), were maintained, notwithstanding all the exertions of Colbert and his successors. Of the *gabelle* (salt tax) we shall have occasion to speak hereafter. The other provinces 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 1373) of two deputies of the states in each episcopal 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 181 *élections*. But, on the establishment of these boards, the right of election was taken from the estates, and the members of the *élections*, 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. Their powers were finally settled by Richelieu, in 1637. France was divided into 32 *généralités*, 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 ministers, connected with the inexperience 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 of the finances (from 1775 to 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 *assemblées provinciales*, composed of the three estates, the king appointing sixteen persons in each province (3 clergymen, 5 noblemen, and 8 of the third estate), by whom the other members, from 32 to 36, 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 by the opposition of the parliaments and 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 English quarter-sessions of the justices of the peace, and the grand jury of the assizes, was interrupted by the dismission 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 *arron-*

dissements. 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 was one of the measures to 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 judges learned in the law. But in the new states-general, the peers named by Philip, in the place of the ancient princes of the realm, had no separate place. There were no hereditary nor official members of this body, but all were elected. The clergy, nobility and third estate assembled in the chief bailiwics, 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 any thing, 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, the parliaments had declared 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 with the consent of the states, 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 17 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, as was twice attempted, under Louis XV, by the chancellor Maupeou, 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 not prevail upon the lawyers to appear at the sessions of Maupeou'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 baffle 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 convoke 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 strengthen the third estate, by 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 every where 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 into the high, the middle and the low, the 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, by the exemption of certain crimes, *cas royaux*, 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 *prévotés.* 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 robe.* 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 (*conseilleurs*). The number was thus large for the purpose of raising more money by the sale of the offices. The supreme tribunals of justice were the parliaments, 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 *Parlement.*) 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 nine presidents of the great chamber wore round caps; hence they were called *présidents à mortier.* The princes of the blood royal, and all peers of the age of 25 years, had a seat and vote in the parliament of Paris. This body claimed to make one whole with all the other parliaments (that of Toulouse, established in 1444; Grenoble, 1453; Bordeaux, 1462; Dijon, 1476; Rouen, 1499; Aix, 1501; Rennes, 1553; Pau, 1620; Metz, 1632; Besançon, 1674; Douay, 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 such a number of counsellors (the other parliaments were formed on the same scale) could not be advantageous to the administration of justice; and though there were usually some distinguished and honorable 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 was annually distributed among them. All the parliaments 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. The ministry had no official influence upon their proceedings, any more than on the appointment of the members; they had the direction of their own conduct, except that the crown officers, the *avocat* and *procureur 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 *mercuriale* was given to these addresses. The parliaments also claimed the power to deviate from the letter of the law, and to decide according to principles of equity, 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 punishment *pour les cas resultans du procès.* The independ-

ence of the parliaments, 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 reign of Henry III; but the difficulty of restoring 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 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 amounted to an absolute irresponsibility. As all places were venal, the desire of promotion could not ever 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 superior courts to obtain political influence, was favored 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 parliaments 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 higher and lower courts. (See *Labarre*.) Voltaire and Linguet attacked this appalling judicial despotism, which was carried to its perfection under Louis XIV, by the *ordonnance criminelle* of 1670, establishing the double torture, and giving a great extension to the judicial power. A sentence of death could be passed on the slightest grounds, perhaps from some preconceived opinion of the judge; and several acknowledged instances of injustice (as in the cases of Lebrun, Langlade, Calas, Montbailli, Labarre, 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, sweetmeats, spices (hence the fees were called *épices*), &c., but gradually became obligatory, and were changed into considerable sums. The account was made up 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'Aligre, 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 favor of the most laborious counsellors; but the place of member of 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, Pau, Dole and Metz, all with numerous officers; and for the decision of revenue cases, 13 *cours des aides*, of which, however, only those of Paris, Montpellier,

Bordeaux, 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 procure for them a respectable rank as well as a 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 from the hands of justice. If the government desired 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 21 counsellors of state, the *maîtres de requêtes* and the 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 such little esteem, as to give rise to the proverb, *il raisonne comme un arrêt du conseil*. The *maîtres des requêtes*, of whom, in 1789, there were 78, 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 respect for the laws annihilated. The voice of the nation 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, Pfeffel, attributes to them the failure of all schemes of financial reform, and particularly of the *cadastres*, 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 which was, that all the superior courts were 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 least, 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 Beaumont (died 1784). The archbishop prohibited the Jansenist 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.

IV. *Organization and Administration of Government.* Although the power of the government was limited by the aristocracy of the parliaments and of the nobility, yet, as there was no legal organ to express the wishes of the nation, in this view the government must be called *absolute*. The despotic power of the government is shown, 1. in the abolition of all independent municipal administration, so vitally important in every well regulated government, monarchical or republican. When the kings of France, of the third dynasty, had found in the growing liberty and consequent power of the cities, means of effectual opposition to their aristocratic vassals, the municipal governments were developed for some time without re-

straint. 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 nobility and clergy, on account of their contributions of money and men; they were convoked as the third estate in the states-general from the 14th 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, *maires*, 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, indeed, appointed the first officer (the *prevôt des marchands*), but the four *échevins* (corresponding somewhat to aldermen) were elected by the notables of the city; the 26 municipal counsellors and the 16 chiefs of the quarters of the city, had their places by inheritance. On the whole, however, the municipal administration was 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 was only made once in four years. Besides this, the swarm of officers rendered the administration of the finances very expensive. The taxes on consumption, viz., 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 44 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 Helvetius, Lavoisier, 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 ignorance, their purse-proud insolence, 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 16½ per cent., whilst the collection of those managed immediately by the government cost only 6⅔ 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 satirically styled. "You will be astonished," said a courtier to the court-banker, De la Borde, "that I, who have not the honor of your acquaintance, ask you for a loan of 100 louis d'ors." "And you," replied the banker, "will be still more astonished, that I, who have the honor of knowing you, should lend them 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 monarch was the only source of the laws (*si veut le roi, si veut la loi*), 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 administration were the chancellor 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 enjoy a seat in the *conseil d'état*, was vested with absolute power. His orders were 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 ministers. The other sections were the *conseil des dépèches*, 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, abovementioned, 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 the *grande chancellerie*, consisting of a chancellor (keeper of the seals), two *grands rapporteurs*, four *grands audienciers*, &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 rather an object to provide places for the higher classes than to secure the welfare of the nation. This principle of considering France as a great fief of the nobility; and the nation as their bondslaves, 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 any thing 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, all the smaller proprietors 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, afterwards without any; yet, after this abolition, 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, 2,609,000,000 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 this enormous mass of real estate, 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, *la capitation* (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 consisted originally 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 4 sous, amounted to 56,000,000; 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. Pfeffel, 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 (Schlözer'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 only one fourth of the soil, paid at least three fourths. To this must be added, 1. 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 20 millions. Those magnificent roads, which traversed France in all directions, principally for the benefit of the higher classes, because the cross-roads, the most important for the farmer, were neglected, were built by the sweat of the oppressed peasants. 2. 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. 3. The third estate alone were obliged to do military duty. 60,000 men were annually drafted by lot for the land service, which lasted six years. It is easy to conceive what sufferings, in such a state of things, 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 52 millions. The tobacco monopoly of government, the customs in the interior and on the frontiers, the duties on colonial goods, and, particularly, the monopoly of salt, were managed by a company of 44 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 60 millions of livres, 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 salaries of their officers, their spies, and the armed force which was maintained to suppress smuggling, estimated together at about 20 millions. The price of a hundred weight of salt, which, if left free of duty, might have been bought for 1½ livre, 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 62 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 that which it had on the national morality, and 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 franches*, 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 1½—2 livres, the French Netherlands, where it cost 7—8 livres; 2. the *provinces rédimées*, 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 manufactories of sea-salt of Saintonge and Poitou, which, after paying the customs, cost them from 6 to 10 livres per cwt. Guienne, 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 salt was raised to 13—15 livres. 4. 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, Dauphiné, Lyonnais; 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, Cham-

pagne, Orleannais, Tourraine, 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 constantly at war with the government, and that the smuggling of salt (*faux saunage*) 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, constantly on foot, and the courts were continually 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 galleys. However severe the punishment might be, it could not deter men from engaging in this business. The 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 counterbalanced 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 enormous prices, to government, which endeavored 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, abolished 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 burdens. 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 revolution. The reader will already have 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 Revolution*, 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 unavoidable, that since 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 said, that France now pays more taxes than in 1789. But this is a mistake. It is true, that, in 1789, only 585,000,000 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 exemptions are abolished, and that the taxes are now assessed on the incomes of all, it will appear that 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 imbitter the feelings of the people half so much as the insolent prodigality of a Pompadour and a Dubarry under

Louis XV. Under his reign, a custom was introduced into the accounts, which became a source and cloak of 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 merely a method of avoiding a statement in the accounts of the objects 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 credible witness, madame Campan; but 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 appears only in part from the private book of the king (*livre rouge*), amounted, from 1779 to 1787, to 860,000,000: secret services in foreign affairs, and pensions and presents to the courtiers, were the principal items of expenditure. These favors 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, Sartine, considerable sums were granted in a similar way. The notorious Beaumarchais received at one time more than 1,000,000 for secret services. Here, also, the 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 endeavored to refute this prejudice in his *Considérations sur le Gouvernement de la France*, 1764. When the revolution had once begun, 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-felt grievances, needed but a slight impulse 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 their eyes in the enormous exactions to which they were subject; the higher classes of citizens, by the hatred with which the overbearing arrogance of the nobility inspired them. The most contemptuous appellations (see *Canaille*) were applied to them by the nobility, for the purpose of keeping up a distinction, which the cultivation and wealth of the citizens had long deprived of all truth. 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 considerable advancement in the intelligence of the nation; and, as reform was loudly called for by all classes, it was natural that, even without the writings of Voltaire and Rousseau, the primitive and natural state of political society should have become the general subject 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 *Contrat Social*—by the works of Fénélon, Bossuet and Massillon. Bossuet's *Politique tirée de l'Écriture sainte* is full of passages of this nature. Fénélon, in his *Directions pour la Conscience d'un Roi*, says (*Direct.* 36, p. 65) plainly, *C'est un contrat fait avec les peuples pour les rendre vos sujets; commencerez-vous par violer votre titre fondamental? Ils ne vous doivent l'obéissance que suivant ce contrat, et si vous le violez vous ne méritez plus qu'ils l'observent.* Massillon, in his Sermons in Lent (*Petit carême*)—that manual of the people—represents to the king, that he owes his power only to the choice of the nation, and concludes with the following words: *En un mot comme la*

première source de leur autorité vient de nous, les rois n'en doivent faire usage que pour nous. No sooner, therefore, had the parliaments effected the meeting of the states-general, than these ideas presented themselves, at once, from every quarter. It required only a motion by Mirabeau (in July, 1789), for the establishment of a national guard, and all France was under arms. This general arming of all the communities on one day, merely on account of an empty rumor, that the harvest was to be burnt down, and the insurrections of the peasants against their lords, which followed immediately, are among the most mysterious and important events of the revolution. How many castles were destroyed, how many archives burnt, the historians of the revolution do not inform us; but it was evident that the common people were already aiming at the destruction of all feudal documents in the hands of the nobility. It was a practical anticipation of the decrees of the national assembly, adopted on the night of August 4, 1789, and on the following days, abolishing all feudal rights. These decrees are the real basis of the whole revolution; they threw off the restrictions on landed property, which had been imposed by the feudal system, and thus paved the way for a municipal organization, upon which the constitution of modern France is founded. All the feudal services and their substitutes were abolished without indemnification; all other *seigneurial* imposts, perquisites and rents were declared redeemable by the tenant. The exclusive right of the nobility to keep pigeons, and to let them loose, in sowing time, on the fields of the peasants (apparently an insignificant privilege, but a great annoyance to the peasantry), was abolished. The game laws were also abolished. The right to kill game on his own ground was given to every one, on condition of his observing the general police regulations. The feudal tribunals were suppressed, and a new administration of justice provided for. The organization of the judiciary, introduced by the national assembly, still exists in its essential features, and has 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 the public support of religion. The tithes in the possession of laymen were declared redeemable. The venality and hereditary descent of all judicial and magisterial offices, the exemption of the nobility from taxes, the exclusion of the third estate from military offices, from places at court, and from the higher dignities of 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 established, 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 destruction of free municipal institutions, of which history gives us an account, was lawful, their restoration 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 security, 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 of Louis XVI 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 annul, 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, have 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 depositaries 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 con-

tended 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, compensation for them; an 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 honor. None could be absurd enough to go beyond this, to the restoration of tithes, *corvées*, feudal tribunals of justice, &c.

In regard to the social 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 to the amount of 2,609,000,000 were sold. These were mostly estates of the church and of the religious orders, as a reluctance existed to buying the estates of the emigrants. These estates were generally sold 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 unsold (340,000,000 in the old provinces, 160,000,000 in the conquered provinces (so called), and 200,000,000 in national woods). Among these, there were many estates of the church, which were used to constitute the funds of the legion of honor and of the senatorships. According to an old work (*Le Cabinet du Roi*, quoted by Linnæus, *Notitia Regni Franciæ*, Strasburg, 1654), the property of the church in ancient France consisted (with the exception of the *foreign clergy*, so called, mentioned above), of 180,000 fiefs (of which 83,000 had superior courts), 249,000 farms and *métairies*, 1,700,000 acres of vineyards (besides 400,000 acres, from which they received ⅓ or ¼ of the wine), 600,000 acres of unoccupied land, 135,000 of ponds, 900,000 acres of meadow land, 245,000 water wheels in flour and paper mills, iron works, &c., 1,800,000 acres of woods, 1,400,000 acres of pasturage. The greater part of the soil was also subject to the tithe to the clergy, and there was not a patch of ground on which there was not a 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 90,879 who had 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 over 500 francs annually; and these, together, paid one fifth of the land tax, whilst the *petite propriété* 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 comparatively much smaller 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 30 years, it has increased one fifth. It was, in 1789, a matter of great dispute, whether France had more than 20,000,000 of inhabitants. Those who estimated it highest, never rated it at more than 25,000,000. After all the destruction of the revolution, and of 25 years' war, 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 entails 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. Napoleon, it is true, reëstablished entails in 1807, and the modern legislation has not only sanctioned them, but even rendered them necessary for peers by the ordinance of August 25, 1817, ac-

cording to which no one could, in future, be raised to the peerage without previously establishing a *majorat*. But the amount of these estates, exempted from the common rule of distribution of inheritances, is comparatively small. The *majorat* of a duke need only yield 30,000 francs net income; that of a marquis or count, 20,000, and that of a *vicomte* or baron, only 10,000. The nation is opposed to this system, and, though the old nobility has often spoken of the necessity of strengthening the aristocracy by imitating the English constitution and usages, according to which all real estate, small or large, generally goes to the eldest son (the fundamental idea in Cottu's work—*De l'Administration de la Justice Criminelle en Angleterre*), the proposition has always been rejected by the nation at large; and, since the revolution of 1830, there is little probability that the aristocracy will succeed in this point. (See *Bande Noire*.) It would have been madness to imitate England in this point, as the organization of France is founded on totally different principles from that of England. 4. The *equality* of all, in the eye of the law, has been established in France so firmly by the revolution, that it probably cannot be eradicated. It is true, that the *charte constitutionnelle* (q. v.) violated this principle in spite of its own words—*Tous les Français sont égaux devant la loi*. The law of election, in 1820, extended this abuse, and would have become truly aristocratic had Polignac's law of election, promulgated in 1830, taken effect; but the revolution, which the measures of this year produced, shows how firmly the nation is attached to the legal equality of all. (See *Election*.) Indeed, had the laws of election previously existing been allowed quietly to take firm root, and had the law of primogeniture been at any time added, a lower nobility would have been created, consisting of hereditary electors (from which the large mass of the nation would have been excluded), and the rendering of the offices of mayors and justices of the peace also hereditary would have been a single and easy step. Hardly the fiftieth part of the nation enjoyed the right of voting. Of 10,000,000 of taxable heads of families, only 90,879 paid 300 francs direct taxes in 1820; and of these 74,000 paid that amount on land, only 3836 on manufactures, and 12,140 on mixed property. Had primogeniture been introduced, an electoral nobility would have been formed, of which those would have constituted a distinct class, who paid 1000 francs annually, and who alone, by the 40th article of the old *charte constitutionnelle*, were eligible to office, and of whom there were, in 1820, according to a ministerial report, only 16,072. Our readers may think that, notwithstanding these laws, there was yet a wide distance from the *ancien régime* to the modern state of France; but, although the law of March 17, 1788, which declared that no person, not of noble descent, through four generations, could be appointed sub-lieutenant, was not actually reënacted, yet it was silently practised upon, and few officers, not so descended, were retained in service beyond the term required by law.

We have not space to explain minutely all the details of the great regeneration effected, by the revolution, through all the different branches of the administration, the education, and moral condition of the nation. (For what has been done in criminal and civil legislation, see *Cassation, Court of*, and *Codes, les Cinq*.) Although, of late years, the administration of justice, under the Bourbons, exhibited alarming symptoms of the influence of party spirit, it will doubtless be one of the noblest fruits of the revolution of 1830, to secure a pure and independent judiciary, as it was one of the first objects of the revolution of the last century to establish it. The whole system of finances, which is so vitally important to a government, owes much to Napoleon. Although formerly so confused that nine years were necessary to correct the chief 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 Puissance Civile dans l'Intérêt Monarchique*, Paris, 1820.) The old laws were silently permitted 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 before the revolution and after it, the frivolity of the *ancien régime*, and the manly spirit of the French of the present day, so clearly manifested during the long struggle, which they have maintained ever since the restoration of the Bourbons, and most strikingly during the glorious days of July, 1830. Language, manners, literature, every thing, has taken a more manly character.

French Language. The Celtic, remnants of which were long preserved in Brittany, was the language of the Gauls. After the conquest of the country by the Romans, under Julius Cæsar, Latin became the predominant language. On the overthrow of the Western Roman empire, this language was corrupted partly in its pronunciation by Teutonic organs, and partly by the mixture of words and expressions originally Frankish, Burgundian, Ostrogothic or Visigothic. This corrupt language was called the *Romance*, 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'Oui* or *d'Oil*, from the latter of which the modern French language is derived. In the beginning of the 12th 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. In the 13th century, the northern, or Norman French dialect, which was much more prosaic than the former, gained the ascendency. 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 refinement, philosophy and literature for all France. The *langue d'Oui* 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 eloquence rather than poetry, and their natural liveliness contributed essentially to encourage nice dialectics. 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 academy (*Académie Française*, or *des Quarante*), 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 mind over the language. Nothing was approved by the academy unless it was received at court, 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 and diplomacy, but of society, 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 courtly 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 instructers in other countries, contributed to render the language universal. From 1735, it also became the common language of diplomacy on the continent of Europe. During and since the revolution, 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 Snetlage). Among the dictionaries of the French language, that of the academy holds the first rank. It first appeared in 1694 (2 vols., folio), and has since been repeatedly republished (last edition, 1825, 2 vols., 4to.) Those of Richelet (new edition by Goujet), Furetière (new edition by Basnage, Beauval and La Rivière), Trévoux and Boiste, deserve 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 Borelle, Paris,

1667, 4to.), is interesting. Among the best grammatical treatises are the grammars of Wailly, Restaut, De Laveaux, Mozin, Levizac, Le Tellier, and Duvivier's *Grammaire des Grammaires*, &c. Girard's Dictionary of Synonymes (new editions by D'Olivet, by Bauzée, and considerably augmented by Roubaud), is an excellent work.

French Literature. Although Charlemagne had done much for the advancement of learning, 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 16th 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 Italians. The art of the Troubadours flourished long before poetry awoke in the north of France. But when the French monarchy fixed its centre in the metropolis of Paris, the north acquired the ascendency, while the poetry of the Provençals sunk 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. Thibaut, king of Navarre, and count 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 really ceased to exist, the 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 12th 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 pleasing facility, were cultivated; and these are the qualities by the combination of which the French prose rose 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 Chenier's *Tableau Historique de la Littérature Française* 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*).

French Grammar, &c. 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, Vaugelas, T. Corneille, Patru, Ménage, Bouhours, Beauzée, Desmarais, &c., have written on this subject. Girard, by his Synonymes; D'Olivet, by his Treatise on Prosody; and Dumarsais, by his Remarks on Figurative Expressions, settled the rules of the language. A still clearer light was shed on them by Condillac'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 *Leçons 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 epic poetry with Bossu, or those of the drama with the abbé d'Aubignac? Rollin's *Traité des Études* will always be esteemed as an elementary work, on account of its clearness. Batteux's *Cours des Belles-lettres*, Dubos's work on Poetry and Painting; Diderot's Observations on the Drama; Marmontel's *Poétique*, with his *Élémens de Littérature*; Rapin's *Réflexions sur l'Usage de l'Éloquence*; Buffier's *Traité philosophique de l'Éloquence*; Fénélon's *Dialogues sur l'Éloquence*, and *Réflexions sur la 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 cardinal Maury's *Traité sur les Principes de l'Éloquence de la Chaire et du Barreau*. Among the productions of more recent times, we must mention Suard's *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 Molière* of Cailhava; the *Mémoires pour servir à l'Histoire de la Littérature Française*, by Palissot; Chamfort's *Mémoires*, and Ginguené'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 *Lycée de Littérature*, particularly the first part, is a valuable work: the last volumes betray 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 religious meditations, and even his scientific 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 Montalte à un Provincial 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 raillery 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 ardor, which, according to his principles, must not be displayed in philosophical treatises, by elegance. 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 draw the individual, without degenerating into caricature. Duclos imitated him. Two immortal works remain to be mentioned—Fénélon's *Télémaque* and J. J. Rousseau's *Émile*. The former was intended to serve as a model for youthful princes, in their future character of rulers. Never, perhaps, was instruction clothed in a more pleasing and noble garb than in this mythological romance. Fénélon's Inquiries into the Existence of God, and his Essay on the Education of Females, are likewise distinguished by a tender, pious dignity. Although Marmontel's *Bélisaire*, and his *Leçons d'un Père à ses Enfans*, do not equal the works just mentioned, yet they imitate them in a manner which does honor to their author. Among didactic writers, we must mention the witty St. Évremond, 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 Staël, on the Influence of the Passions upon the Happiness of Individuals and Society, presents, like all the other writings of this remarkable woman, ingenious views, novel turns, and a rare independency of mind. De Volney's Catechism for the French Citizen, and Saint-Lambert's General Catechism, or *Principes des Mœurs chez toutes les Nations*, deserve notice. At the present day, Droz (q. v.) has distinguished himself by his work on morals. Dégérando's *Perfectionnement Morale* has much reputation. It has been translated in America (Boston, 1830). The *political* writers in France commence with the venerable chancellor de l'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 jurisconsults, contributed much to it. Hubert Languet, under the assumed name of Junius Brutus, wrote a remarkable work on the lawful power of a prince. La Boëtie, Bodin (Jo. Bodinus), Boisguilbert, Lamoignon, D'Aguesseau, St. Pierre and Mélon are celebrated names in this branch of French literature. The *Économies royales*, by Sully, must not be forgotten here. The first place, however, is due to Montesquieu, for his great work, *De l'Esprit des Lois;* he lived from 1689 to 1755. J. J. Rousseau, in his *Contrat social*, disclosed truths which before had scarcely been suspected. Mably gained reputation by many works, especially by his *Entretiens de Phocion*. Servan, Dupaty, Forbonnais, Turgot, distinguished themselves in this department; and Necker's writings on finance are well known. Mirabeau 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 Siëyes. Lebrun, Barbé-Marbois, Roederer, Dupont de Nemours, Garnier, J. B. Say, Ganilh and Merlin, Perreau, Bourguignon, Bexon, Pastoret and Lacretelle, are able writers on the science of legislation and jurisprudence.

Pulpit Eloquence and Works on Education. Lingendes first distinguished himself by his sermons and funeral discourses, in the reign of Louis XIII. Bossuet warmed his audience by his noble zeal for truth and piety no less than by his splendid eloquence, which bears the character of the age of Louis XIV. His celebrated *Oraisons funèbres* contributed very much to the cultivation of French prose. Bourdaloue was his rival, and was acknowledged to be the first of French preachers; he lived from 1632 to 1704. Anselme and Fléchier were popular preachers. Massillon learned much from these great predecessors, and touched the heart by the most moving language of Christian humility. Among Protestant preachers, Saurin is distinguished.—In *Works on Education*, 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. Leprince de Beaumont, Mad. de Genlis, De Bouilly, Berquin, Ducray-Duménil, &c., as written in an intelligible 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 easy by the valuable *Collection universelle de Mémoires relatifs à l'Histoire de France*, the first 12 volumes of which contain only those from the 13th to the close of the 15th 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 literary monument to his pious sovereign. Christine de Pisan, 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, hypocritic Louis XI. He is the most ingenious, and, both in point of style and matter, the first among the writers of French memoirs, from the 13th to nearly the beginning of the 17th century. Froissart wrote a larger historical work, to which he endeavored to give an epic character, by the charms of striking narratives. 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 unparalleled in historical literature, characterizes the notorious memoirs of Brantôme. 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. Mézerai wrote the history of the French monarchy with independence. Pelisson, in relating the conquest of Franche-Comté, is a panegyrist rather than a historian. Varillas filled 15 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 purer. At the same period, Daniel, Joseph d'Orleans, Rapin 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 profoundness of research, but are good for beginners and amateurs. Next in time comes Crévier's history of the emperors, and Lebeau's *Histoire du Bas-Empire* (revised and enlarged by Royou, Paris, 1814, 4 vols.). The ecclesiastical history of the abbé Claude Fleury, who lived from 1640 to 1723, is a superior work. Hénault gave 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 the *Essai des Mœurs*, and of the History of the Age of Louis XIV, holds a distinguished rank among historians. Duclos's *Mémoires secrets* are valuable. Millot is correct and impartial, but timid and feeble. Gaillard's merits are obscured by his diffuseness. Raynal's philosophical history of the commerce carried on by the Europeans in the Indies, deserved and acquired celebrity. Rulhière's History of the Revolution by which Catharine II 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. Mirabeau's History of the Prussian Monarchy under Frederic the Great is extremely rich, but wants method. Frederic 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, severe, but concise, pure 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. Anquétil and Desodoards have written the history of France. De Ségur's picture of Europe, in his *Histoire des principaux Événemens du Règne 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*, 2 vols., continued and completed by the younger Lacretelle, 5 vols., is esteemed, as is likewise *Précis des Évenémens militaires*, written by Matth. Dumas. The *Considérations sur les principaux Événemens de la Révolution Française*, a posthumous work of Mad. de Staël, and Mignet's *Histoire de la Révolution Française*, deserve, likewise, an honorable mention here. French literature is also rich in excellent translations 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 Henri IV à Coriandre d'Andoise, Comtesse de Guiche, sa Maitresse* (Amsterdam and Paris, 1788) are interesting and well worth reading. The letters of business of that period were written in the common official style. Even the letters of Malherbe, the lyric 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 distinguished as letter writers; and the national liveliness of the French, combined with wit and ease, but without deep feeling, led to a finished epistolary 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 principal aim was to write elegantly, without pomp, and with the seriousness of Cicero; he 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, spun out into artificial periods, and bristling with antitheses. It next became a matter of ambition to combine the merits of these two writers. Costar wrote with correctness, elegance and delicacy; but the female writers are the most distinguished in this branch of literature. The first rank among them is due to the amiable marchioness de Sevigné. We may also mention the letters of Mlle. de l'Espinasse, and Mad. du Deffand. The letters of the beautiful Ninon de l'Enclos are characterized by a charming grace, yet their genuineness is doubtful. Those of Babet are distinguished for delicacy of sentiment and expression. The letters of count Bussy-Rabutin are overcharged with the refinement of a *bel-esprit*, but are not uninteresting. Chaulieu gave a pleasing example of letters intermixed with verses. The art of epistolary composition became so common an accomplishment among the French, that, even in Voltaire's letters, they admired his genius, rather than his particular talents for letter writing. The art of reasoning and of delicate raillery in epistles, was carried to perfection by Gresset, one of the wittiest men of his time. Dorat, Sedaine and De Pezay wrote pleasing epistles of this species. The abbé de Bernis is particularly rich in beautiful descriptions. Montesquieu's *Lettres Persannes* must be mentioned here as models of a fine style.—French literature abounds in excellent *Travels;* but, as they cannot exercise any great influence on the peculiar genius of a literature, it is unnecessary to enumerate them. The celebrated Travels of Anacharsis the Younger, by the learned abbé Barthélemy, are every where known. The *Lettres sur l'Italie* by Dupaty are much esteemed. Volney, Denon, Delaborde, and, above all, Humboldt and Bonpland, are among the most distinguished of modern travellers. To the student of antiquities, the observations of Millin and Champollion on their travels are highly interesting. A good view of the literature of travels may be obtained from Malte Brun's *Annales des Voyages.*

Romances and Novels. The earliest French *romances* relate to the knights of the round table, and Alexander the Great. They are by Lambert di Cors, continued by Alex. du Bernay, and were written in the 12th century. The romances of the round table comprise the St. Graal, Triston de Leonnais, Perceval and Lancelot, and were originally written in Latin, then translated into French prose, and, in the same century, put into French verse, which, in the 14th century, was again remodelled into French prose. In the 13th century succeeded the romances of the Twelve Peers of France. A higher interest, however, was excited by the allegorical Romance of the Rose, which, for two centuries, was looked upon as the triumph of French genius. It is wholly in verse, but in very lame verse. It forms a didactic-allegorical poem, which some Frenchmen were bold enough to compare with the work of Dante, which was finished the same year! William of Lorris wrote the 4150 first verses in the first half of the 13th century; 100 years later, it was continued, and completed by Jean de Meun, surnamed *Clopinel.* The object of this romance is to exhibit a complete art of love. A host of allegorical personages make their appearance in it; all the virtues and vices are personified; all the characters moralize; but, at the same time, the most frivolous allusions are interspersed through the whole work, which, towards the end, are converted into the most vulgar obscenities. French poetical genius here reasons in its very outset. The work contains pleasing passages, but no traces of much elevation of spirit. It was finally denounced from the pulpit. One of the oldest printed editions of it is that of Paris, 1521, folio. Towards the close of the 13th century, an allegoric-romantic poem was written by Jacques Gelée, under the title of *Le Roman du nouveau Renard*, which was, probably, the origin of the German poem, *Reinecke der Fuchs* (Renard the Fox); and, in 1330, 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'Heptaméron ou l'Histoire des amans fortunés de très-illustre et très-excellente Princesse Marguérite de Valois, Reine de Navarre* (1559), are written in the manner of Boccaccio, and it can hardly be conceived, how a woman could so entirely divest herself of female

delicacy. The tone, however, was not offensive to the manners of her age. The 100 tales of the Burgundian court had appeared at an earlier period, in the reign of Charles VII, and also the two following romantic poems, written with a charming simplicity—*Gérard de Nevers*, and *Le petit Jehan de Saintré*, which were afterwards published in a revised edition by Tressan. During the crusades, the French knights became acquainted with Arabian poems, which gave rise to the fairy tales that afterwards became so popular, and which, with the romances of chivalry, became the sole repositories of whatever romantic enthusiasm was yet left in France. These little romantic tales were called *Fabliaux* (See Méon's *Nouveau Recueil de Fabliaux et Contes inédits des Poètes Français*, of the 13th and 14th centuries, Paris, 1823, 2 vols.).—The *romances of chivalry*. Huon of Bordeaux, Ogier the Dane, and similar stories of the Paladins of Charlemagne, were written at the beginning of the 15th century. In the beginning of the 16th century, the taste for this species of literature again revived in France; but the genuine romance gradually passed over into the *historical*, which, in turn, degenerated into histories of intrigues and court anecdotes. A new species, the *satirical* romance, was introduced by Rabelais, in the first half of the 16th century. His Gargantua and Pantagruel is coarse, but full of wit, comic originality and inexhaustible fantastic invention. When Anne of Austria became queen of France, *pastoral* romances, on the model of the Spanish, became popular. Agreeably to the French character, the comic was introduced into them by Nicolas de Montreux, in his *Bergeries de Juliette*. The first Frenchman who rivalled the Spaniards in this department was Honorée d'Urfé, in his *Astrée*, which was received with enthusiasm. The Provencal-romantic spirit seems to breathe from this work, the ingenious and enthusiastic author of which was born at Marseilles; his own history is interwoven in his work (5 vols., the 1st 1610). It depicts no world of Arcadian shepherds, but one of chivalric gallantry. The romantic sentimentality of this work had an influence on the *historical* romances, which became popular during the reign of Louis XIV. Calprénède treated Grecian and Roman subjects in such a manner as to leave nothing Greek or Roman but the names. He had a rich and poetical imagination, but he belonged to the school which endeavored to elevate genius at the expense of taste, and which, by its excess, threw the victory into the hands of the opposite party, which found merit only in a close adherence to the rules of art. Calprénède 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 Mlle. de Scudéry's works, tenderness of sentiment is lost in an affected sensibility, and a shallow stream of words. She died in 1701, at the age of more than 90 years. The ladies appear to have felt a special calling for the cultivation of this field, and by their efforts the romance gradually descended into the sphere of realities. The historical novels of Mlle. Rose de Caumont de la Force met with a very favorable reception; she had the art of giving to them the coloring of true history. Madame de Villedieu made it her peculiar business to metamorphose anecdotes from ancient history into tales of gallantry. Her *Galanteries Grénadines* are written in the Spanish style. *Fairy tales* then came into vogue. The Arabian Thousand and One Nights, which were translated into French by Antoine Galland, found numerous imitators. The *Contes de ma Mère l'Oye*, written by Perrault, and the Tales of the countess d'Aunoy, were very much read. Hamilton's stories were distinguished for wit and boldness of imagination; even the venerable Fénélon 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 historical novels; her *Zaïde* is distinguished for elegance of style and tenderness of sentiments. The number of *comic* romances was not so great. Paul Scarron, well known for his wit, and his marriage with Mlle. d'Aubigne, 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 humor is often insipid and verbose. The novels of Lesage are in imitation of Spanish works. His *Gil Blas*, and *Diable Boiteux*, were universally admired; besides these, he left six other works of the same kind. The *Roman Bourgeois* of Furetière, was read for a time, and then forgotten. The invention of the domestic novel belongs to the English. The abbé Prevôt translated the works of Richardson; and his own novels, *Cleveland*, *Le Doyen*

de Killerine, and particularly *Manon Lescaut*, touch the heart. The same may be said of Segrais's novels. In Montesquieu's *Lettres Persannes*, fiction serves merely to convey philosophical satire. In comic novels, as *Candide*, *Zadig*, *Micromegas*, 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 style. J. J. Rousseau's *Nouvelle 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*), Mesdames de Tencin, de Graffigny, and Riccoboni, Marmontel—in his *Belisaire*, *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 *Galathee* of Cervantes, and by his own lovely *Estelle*. 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 stained by the most shameless immoralities. Such are the *Liaisons dangereuses* of Laclos, and *Justine*. One of the best novelists in the latter half of the 18th century was Rétif de la Brétonne. Two later writers in this branch of literature throw all their predecessors into the shade—Bernardin de St. Pierre and Châteaubriand. (q. v.) The former gained the reputation of a writer of much sense and feeling by his *Études de la Nature*, while he won all hearts by his Paul and Virginia, and *La Chaumière Indienne*. His works are distinguished by charming pictures of nature, a simple and unaffected style, and a tender sensibility. Châteaubriand's religious tendency, and his warm and glowing imagination, appear every where 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. Among the modern female writers, Madame de Staël is the most distinguished. Her *Corinne, ou l'Italie*, is a masterpiece. Her *Delphine* contains many beauties, mixed with many faults. The well known Madame de Genlis is an extremely prolific writer. She possesses ease and talents, but neither genius nor depth. The romances of Madame Cottin, *Malvina*, *Amélie Mansfield*, *Elisabeth*, and *Mathilde*, are full of tenderness and loveliness. The works of Madame de Flahaut (subsequently Madame de Souza) are written with taste, and display a nice talent of observation, an intimate knowledge of life, and delicacy of feeling. *Adèle de Sénanges*, *Mademoiselle de Tournon*, and *Eugène de Rothelin*, are the best. *Le Nègre comme il-y-a peu de Blancs*, by Lavallée, *Les Quatre Espagnols*, *Le Manuscrit Trouvé au Mont Pausilippe*, by Montjoye, and *Valérie*, by Madame de Krudener, rank among the best modern novels. The prolific Pigault le Brun often assumes too much liberty in every respect. Fiévée's *Dot de Suzette*, Salvandy's *Alonso*, Madame de Montolieu'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 Françaises.*) 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 *gay 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 12th century. Chrétien 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 Alexandrine verse derived its name) lived between 1180 and 1223, at the court of Philip Augustus, where he composed and sang his life of Alexander the Great in rhyme, which is full of allusions to the deeds of Philip. Thibaut, king of Navarre, addressed to the lady of his love, Blanche, queen of Castile, 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 (*envoy*), which the Italians retained in their *canzoni*. The language is as different from modern French as the language of the Suabian *minnesingers* from modern German. The Norman Trouveurs and the Provençal Troubadours saluted each other as brethren in art. The châtelain de

Coucy 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 *Poésies de Marie de France, Poëte Anglo-Normand du XIII Siècle* (Paris, 1820, 2 vols.). The songs of many French poets of the 14th century surprise us by the similarity of their metres to those of the old Spanish songs. The celebrated poetess Doëte 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 *pastourelles* and *rondeaux*. They are distinguished by the most graceful simplicity and loveliness. We have also a great number of lays and virelays by him. He collected part of his poems in the form of a romance, under the title Meliador, or the Knight of the Sun. His allegoric poem, the Paradise of Love, and a religious poem, the Three Marys, were favorites. The comic *fabliaux*, in verse, were in favor in the 12th and 13th 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 15th century. The triolet, 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, who, at the battle of Agincourt, fell into the hands of the English, was distinguished by the unaffected grace of his songs. During that war, which had nearly destroyed the French monarchy, there were several such princely minstrels. John and Philip, dukes of Burgundy, René of Anjou, John of Lorraine, and several others, were connected with one another; and their songs may be found in the old manuscript collection of songs (*Balladier*); but genius of a high order must not be sought among them. To this period belong Clotilde du Vallon-Chalys, Alain Chartier, Villon, who made his own tricks the theme of his songs, Coquillart, distinguished for copiousness of burlesque expression and for licentious sallies, and Gretin, or Du Bois, and Bordigné. Michault, Martial d'Auvergne, Olivier de la Marche, Chastellain, Michel d'Amboise, &c., belong to the lyric poets of the beginning of the 16th 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 Greek and Latin classics into France, and was justly called the *father of letters*. Through the influence of Catharine of Medici, sonnets came into favor. Jean Marot and his son, Clement Marot, make an epoch. Their imitators were called *Marotists*. Both lived entirely at the court. They were witty profligates, 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 from the Latin and Italian. He had warm friends, and not less violent enemies. Among the former were Mellin-de-St.-Gelais, who, like him, aimed at classical elegance in trifling, and Dolet, who was burned as a heretic. Margaret of Navarre and Mary Stuart wrote songs in French. With the poet Jodelle, began the school of French sonneteers. 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 he was destitute of feeling, and ran out into endless subtleties and an empty pomp of phrases. Of the other *pleiades*, Du Bellay and Baïf had the greatest 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 their first classical lyric poet, discovered the true nature of French prosody. He was without poetical fancy or boldness of imagination, but he was an able critic, and a powerful tyrant of words and syllables. The classic dignity of language, for

which the French are indebted to him, is particularly exhibited in his odes and stanzas. He died in 1627. Regnier distinguished himself by his classical satires and pictures of manners. Théophile Viaud rivalled Malherbe, and possessed the rare talent of improvisation. The pastorals, or *bergeries*, then came into vogue. Racan and Mairet distinguished themselves in this species of poetry. As epigrammatists, Gombaud and Brebeuf were celebrated. The influence of Aristotle on French poetry was already apparent in the 16th century. The lyrical poems of Racine have more elegance of language than poetical merit. Jean la Fontaine, born in 1621, died in 1694, was a popular favorite. An inimitable simplicity of description, which sprung 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. Benserade's songs were popular. At the head of the comic poets of that period were Lullier (Chapelle), Bachaumont, 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 favor. Pavillon, St. Pavin, &c., recommended themselves by elegant trifles. Segrais'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 Pompignan, who lived from 1709 to 1784, are noble and full of feeling. Berquin, Léonard of Guadeloupe, and Mademoiselle 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 *Epitres* of Ducis and De Fontanes are excellent. 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, Arnault and Ginguené are happy imitations of Lafontaine's; and Andrieux, in his *Meunier sans Souci*, reminds us of the manner of that celebrated writer. The early death of Millevoye, whose *Amour Maternel* and *Belzunce* 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 able to change the propensity of the nation to frivolous subjects. Bertin (died in 1790) is the most distinguished elegiac poet. Chenier excelled in idyllic poetry. Of the late lyric writers, Lamartine is the best.

In *epic poetry* of merit, French literature is very poor. The first epic attempt of any consequence was made by Desmarets-de-St.-Sorlin, a *protégé* of Richelieu. He died in 1676. Boileau ridiculed him with much severity. Desmarets 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 Clovis, though not judicious, displays a rich poetical conception. The machinery was borrowed partly from the 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 Couronne reconquise*, is monotonous and without taste. Limojon-de-St.-Didier sacrificed Clovis anew. Ronsard's *Franciad* must not be forgotten in this catalogue of unfortunate epics. Fénélon'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 being a true epopee. The *Henriade* 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 total want of poetical illusion is severely felt throughout the poem. The allegorical personages are particularly unpleasing. Voltaire stained his fame by his *Pucelle*, 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 *Helvétiens* is historical rather than epic. Châteaubriand's Martyrs is ranked by some critics, and perhaps more justly

than *Télémaque*, among the epics. In the mock heroic, besides Voltaire, Boileau 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 Rosecroix*, 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 Scyros* of Luce de Lancival contains fine passages, though the plan is very defective. Baour-Lormian, in his *Poëmes Galliques*, imitates Ossian. Creuzé de Lesser'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 comprise, with the *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 Poëtique* has been already mentioned. Two didactic poems of the younger Racine, *La Religion* and *La Grâce*, as also Voltaire's *Discours sur l'Homme*, *La Religion Naturelle*, and *Le Désastre de Lisbonne*, and Dulard's *La Grandeur de Dieu dans les Merveilles de la Nature*, deserve to be mentioned. Watelet 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 this department a favorite by his *Les Jardins*, *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 Esmenard, *L'Astronomie*, by Guidin, *Le Mérite des Femmes*, by Legouvé, *Le Génie de l'Homme*, by Chénedollé, *Les Trois Ages*, by Roux, are of superior merit. The last great work of Delille, *Les Trois Règnes de la Nature*, abounds in beauties. Lamartine is also distinguished in this department of poetry.

Dramatic Poetry and *Art*. The principal work on the French drama and stage is the *Histoire du Théâtre Français depuis son Origine jusqu'à présent* (Paris, 1734 and 1756), in 15 vols., by the brothers Fr. and Cl. Parfait, who also published a *Dictionnaire des Théâtres de Paris, contenant toutes les Pièces qui ont été représentées jusqu'à présent, des Faits Anecd. sur les Auteurs, Acteurs, Actrices, Danseurs, Danseuses, Compositeurs de Ballets*, &c. (Paris, 1756 and 1758, 7 vols.). The treatises of Fontenelle, Suard (in his *Mélanges de Littérature*), La Harpe, Lemercier and A. W. von Schlegel (Lectures on Dramatic Literature) should also be consulted. The French themselves admit that it is difficult to give a connected history of their theatre. The earliest period to which the origin of the French theatre can be referred is the reign of Charlemagne, when we find the first mention of *histriones*, or clowns, jesters, rope-dancers and jugglers. Charlemagne banished them on account of their licentiousness; and, under his successors, no traces of them are to be found. The people, however, did not lose their taste for public spectacles, and thus originated the feast of fools. (See *Fools, Feast of.*) The Troubadours, the creators of French poetry, also presented their songs in the form of dialogues, and first received the name *les comiques*, or *comédiens*. Among 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 14th and the beginning of the 15th 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 performers received the title of *brethren of the passion* (*confrérie de la passion*), by letters patent from Charles V, because they represented the passion of our Lord; and, during the reigns of Charles VI, Charles VII and Louis IX, the drama made a rapid progress, notwithstanding the civil wars and the distracted 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 at first performed their plays in the streets, in the open air; afterwards, in

a hall, in the hospital of the Trinity, and, at a later period, in the hôtel de Bourgogne. The spectators were seated, as at present, in rows of seats, rising one above another (*établies*), the highest of which was called *paradise*, the others, the *palace of Herod*, &c. God the Father 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 world. An alcove with a curtain belonged 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, circumcisions, &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 for some hours, merely to give the players time 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 Savior, or the martyrdom of a saint, was succeeded by the buffooneries of the clown. Parts of the play were sung, some even in choruses. The verses were principally iambic lines of different length. Such was the infancy 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 *clercs 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 humor, 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 plays, 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 Patelin* (probably first represented about 1480), which still maintains itself upon the French stage (as remodelled by Brueys and Palaprat), and which has had a decided influence upon the comic drama of the French. Pierre Blanchet is said to have been 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 favor at Paris for two centuries; but their indecency and personalities became a public scandal. The parliament repeatedly caused the theatres to be shut. In 1542, the actors were all thrown into prison; and, in 1545, the society was abolished. About the same time with this, a third society was formed, called the *children without care* (*enfans sans souci*). Its members were young men of good families; their president was called the *prince of fools* (*prince des sots*), and their performances were called *follies* (*sotics*). 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 their grandmamma, Stupidity, who brings them 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 privilege. But they assumed 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 Clement Marot (the favorite of the great queen Margaret of Valois) became a member of the society, which was finally abolished in 1612. Both these latter societies played gratuitously. Not so the *brethren of the passion*, whose prices the parliament was even obliged to limit. On condition of an annual payment of 1000 livres to the poor, 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 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 had hitherto been no model in France, 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 eight 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 performançe, which decided the fall of the old theatre in 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 Shakspeare. Jodelle introduced the strict observance of the three Aristotelian unities, chose the purely historical manner, excluded every thing supernatural, and took his subjects from Roman and Greek history; but his personages all spoke like modern Frenchmen, and with a most violent 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 Medea (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 Famine;* by Garnier, who, in his *chef-d'œuvre*, Hippolyte (1573), eclipsed all his predecessors by the harmony of his verse, 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 16th century was the period in 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 40 remain on the stage, Nepee, Théophile, &c., contributed little to the progress of the French drama. Mairet, author of a piece called *Sophonisbe*, which is still esteemed; Rotrou, whose *Venceslas* is yet played at the *théâtre Français;* Duryer, Baro, &c., who united elegance of expression, sound judgment, and a refined taste, went far beyond those who preceded them. At length appeared the great Pierre Corneille, eclipsing all his predecessors. He had the rare talent of making great characters speak the language of passion with dignity. He first showed his nation a model of tragic power and elevated style; yet he himself bent under the yoke of rigid criticism and prejudice. He is the only French poet, on whom the French bestow the epithet of *great*. Medea was his first tragedy; the Cid, Cinna, Polyeucte and Rodogune are considered his masterpieces. Jean Racine became the favorite of the nation in tragedy. His first tragedy was *Les Frères Ennemis*. His Andromache (1667) was received with as much applause as the Cid had been 30 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 tone of the court was his constant model. Athalie is his best piece. Voltaire is the third great tragic poet of the French, and his Zaïre 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 characters; 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, Lafosse, Guimonde-de-la-Touche, Lefranc, Laharpe,

Lemierre, De Belloi, &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 Abufar; Arnault, whose tragedies are distinguished by power and tenderness; Legouve, Lemercier, &c. *Les Templiers,* by Raynouard, his only tragedy, has given him a deserved reputation. The hero of *Manlius* was the favorite part of Talma. Jouy's *Sylla,* the *Vèpres Siciliennes* and the *Paria* of Delavigne, and the *Clovis* of Viennet, are among the chief ornaments of modern French tragedy. These 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 Bazoche, particularly with that of the *Avocat Patelin* and the *sotie*s 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 age, and without allegoric 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 favorite pastoral poetry with the drama. The moralities were turned into pastoral plays, in which Christ was the bridegroom and the church the bride. The cultivation of true comedy was continued by Pierre-de-la-Rivey; his comedies were founded chiefly on intrigues and comic surprises. In 1552, the "brethren of the passion" leased their privilege to a society of actors, which, under the name of *troupe de la comédie Française*, exists to this day. They played in the hôtel de Bourgogne. Shortly after, Henry III filled France with clowns, whom he brought from Venice. They called themselves *i gelosi* (people who endeavored to please). When they began to play in the hôtel de Bourgogne, great crowds of people went to see them. Farces of all kinds became popular; even Richelieu did not disdain the jokes of the *Gros Guillaume*, the clown of the Parisians. The Italian *arlecchino* 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 prejudices in the comedy than in the tragedy. His youthful trials in comedy are finer, more correct and decent than any thing which had been known before in France, in the comic drama. He had but just finished his 18th year, when he wrote his comedy *Melite.* His later work, the Liar, is the first French comic character-piece of classical value. As a writer of operas, he distinguished himself by his *Andromeda.* The comedy of Racine, *Les Plaideurs*, is full of comic power. But Jean Baptiste Pocquelin, called *Molière*, born in 1620, is at the head of French writers of comedy. *L'Étourdi* was the first piece by which he became known. His theatre soon became the most frequented in Paris. His company received the honorary title *comédiens ordinaires du roi.* We have 35 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 *chefs d'œuvre*, Tartuffe and the Misanthrope, became models of the higher comedy. To the second class of his comedies belong the character-pieces in prose, of which *L'Avare, George Dandin* and *Le Bourgeois Gentilhomme*, are the most celebrated. The manner of these is more free, and the humor more broad. He allowed the greatest freedom to his humor in those pieces in which he often introduced music and pantomime, such as *Les Fourberies de Scapin, Monsieur de Pourceaugnac*, and *Le Malade imaginaire.* The comic was carried, in these pieces, to a height which it had never reached since the extinction 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. Plays of intrigue were less popular than character-pieces. None of the later poets came so near to Molière, in delicacy and comic power, as Régnard (q. v.), (1647 to 1709). Dancourt was inexhaustible in the invention of comic situations. Le Grand was more negligent in his style, but full of comic merriment. His *Ami de tout le Monde* is still performed. Shows and ballets rendered his comedies still more attractive. Baron, a celebrated actor of his time, endeavored to imitate the more elevated character-pieces of Molière. Dufresny wrote good conversation-pieces. Montfleury was the first

who wrote tragedies in the Spanish manner, with comic interludes. Le Sage also imitated 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. He excelled in touching scenes. No writer has produced finer delineations of characters than Destouches. Bergerac, Boursault, Brueys, La Font, Palaprat and the younger Corneille were some of the most popular composers of farces. Since Corneille's *Andromeda*, much had also been done for the opera. The marquis de Sourdenc founded, in 1699, the *académie royale de musique*. The rich imagination and melodious poetry of Quinault fitted him to be the first of opera writers. He is the most musical poet of his nation. Duché, Campistron and Fontenelle imitated him. The pastoral pieces of the latter could please only in that affected age. Houdart de la Motte wrote in all branches of the drama, but was not much distinguished. The comic opera originated from the circumstance that, in 1707, the popular comedies of the fairs had been prohibited. More connexion was then given to the *Vaudevilles*, and the place of the dialogue was supplied by pantomime. This change was so successful, that the interdiction was soon removed. Marivaux's plays are affected and pedantic. Boissy and St. Foix enriched the French theatre with some witty 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 *Barbier de Seville*, and by its continuation, *Le Mariage de Figaro*. The latter piece was represented 73 times in succession, after its first appearance, in 1784—a distinction which, no doubt, is rather to be ascribed to its bold ridicule of the higher classes, than to its intrinsic value. Collé, Fagan, Moissy and Fabre d'Eglantine, Cailhava, Laujon, Laya, François de Neufchâteau, are some of the most popular of recent writers. Collin d'Harleville's *Vieux Célibataire*, *L'Inconstant*, *L'Optimiste* and *Les Châteaux en Espagne* are full of truth and interest. Andrieux, whose *Les Étourdis* and *Le Souper d'Auteuil* are in great favor, writes with much taste. His comic muse has been educated in the school of the graces. Picard, who had written 35 comedies before his 40th year, knows how to combine gaiety with morality. The tragic writer Lemercier has also written two comedies, *Pinto* and *Plaute*, which possess a rare interest. Bibouté pleased by his first trial, *L'Assemblée de Famille*. Among the modern sentimental comedies are distinguished *Mélanie*, by Laharpe, *L'Abbé de l'Epée*, by Bouilly, and *La Mort de Socrate*, by Bernardin de St. Pierre. Jouy, the author of the *Vestale*, Etienne, Esmenard and Hoffmann are the most celebrated among the living authors in the serious opera; Monvel, Marsollier, Duval, Dieulafoi, Piis, Scribe and Barré in the comic opera and the *vaudeville*.

A glance at the history of the French drama will convince us that Corneille, Racine, Molière and Voltaire gave its present form to the French theatre; and time only can determine whether a new path shall be opened in the direction to which the *romantic school*, as it is called, has pointed, and a new criterion of the art shall be fixed by some commanding genius. Hitherto, the increased acquaintance with Shakspeare, and the views of Diderot, Beaumarchais, Mercier and others, deviating more or less from the old classical school, have not produced much effect. If, however, we may venture a conjecture, it would seem that France, so totally changed by the revolution, and in close literary intercourse with England and Germany, cannot forever adhere to the old standard, though a long time may elapse before the new principles are firmly established. In comedy, a great change has already taken place since the revolution; and numerous authors, as Andrieux, Collin d'Harleville, Duval, Picard, &c., have successfully substituted the comedy of intrigue for the character-pieces of Molière. But in tragedy, every deviation from the old standard is still considered an offence against good taste.

French Literature in Late Years. The French literature 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 interest in proportion as they were connected with 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. Desmarais's *Considérations sur la Littérature et sur la Société en France au 19me Siècle* (Paris, 1821), may be consulted on this point. The language itself, since the example of Madame de Staël, has not escaped innovations. Lavaux, in his *Nouveau Dictionnaire de la Langue Française*, armed with the treasures of the language of writers of the 17th and 18th 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 Pougens' *Trésor des Origines et Dictionnaire grammatical raisonnée de la Langue Française*, 4to., and Mésangére's *Dictionnaire des Proverbes Français* (3d edition, 1823), are valuable works. Great attention has been excited by the metaphysical writings and lectures of Victor Cousin. (q. v.) The works of De Gerando, Laromiguière, Destutt de Tracy, Azaïs (*Système universel de Philosophie*, 8 vols., 1824), Toussaint (*Essai sur la Manière dont 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 pénales* (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 abbé Mennais, 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. Raffenel's *Histoire des Événements de la Grèce* (Paris, 1823, sqq., 3 vols.), Dufay's work, Pouqueville's *Histoire de la Régéneration de la Grèce* (new edition, 1826), appeared at the moment when Michaud's *Histoire des Croisades* (8th edition, 1826), Lebeau's *Histoire du Bas-Empire, édit. nouv. Revue et corrigée par Saint-Martin*, retraced the events of the past. Mollien's *Voyages dans la Républ. de Colombie* is also favorably distinguished. The profound works of an earlier period have been reëdited (*Art de vérifier les Dates*, by Allais, and *Art de vérifier les Dates depuis l'Année 1770 jusqu'à 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. Compl. des Mémoires relatifs à l'Histoire de France*, by Petitot; *Dépôt des Chartes et des Lois, tant nationales qu'étrangères*, 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 Delbare, Lacretelle and Sismonde-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, valuable researches have been made in regard to separate periods (*Fastes civils de la France depuis l'Ouverture des Notables jusqu'en* 1821; Jouffroi's *Fastes de l'Anarchie*; Barginet's *Histoire du Gouvernement féodal*). In regard to the ancient history of France, the learned and ingenious treatises of Guizot (*Essais* and *Leçons*); the works of the brothers Thierry on the Gauls and Normans; Barante's *Histoire des Ducs de Bourgogne de la Maison de Valois*; Beugnot's *Les Juifs d'Occident, ou Recherches sur l'État 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; the *Mémoires et Correspondance de Duplessis-Mornay pour servir à l'Histoire de la Réformation*, &c., are of great value. (For the works relative to Napoleon, see the article *Napoleon and his Times, the Works on*.) Guizot's History of the English Revolution, not yet completed, and Daru's History of Venice, are among the most valuable contributions that modern history has received. A great number of places, historically important for their monuments, or on account of events of which they have been the theatre, have been carefully examined, and many interesting works have appeared in this department (Dulaure's *Histoire Physique de Paris* (3d edition, 1824), and *Histoire*

des Environs de Paris; Monumens de la France, par Al. de Laborde, and *Antiquités de l'Alsace, par Golberry et Schweighäuser*). 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 Voyageur ou la France au XIVme. Siècle, par Monsieur de Marchangy*). Some works, however, describe the manners of the age, as Mortonval's *Tartuffe Moderne*, or address themselves to a sickly state of feeling, as the *Ourika* and *Edouard* of the princess de Salm, or Arlincourt's gloomy pictures, and the countess de Souza's *Comtesse de Fangy*. Dramatic literature also presents a great number of works, in which Soumet and Viennet endeavor to emulate the fame of the old tragic writers; while the sportive Scribe, Delavigne, Gabriel and Edmond (the authors of *Jocko, Drame à 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 Lekain et sur l'Art théâtrale*, endeavored 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 *légitimes* of literature, while the romantic are a sort of literary liberals, actively engaged in combating old prejudices and errors. (See *Le Classique et le Romantique par Baour-Lormian*, and *Essai sur la Littérature romantique*, 1825.) At the head of one party is Lamartine, author of the *Méditations poétiques*, who, by his *Chant du Sacre*, brought himself within the sunshine of court favor. At the head of the other is Delavigne, author of the *Messéniennes*. More light than both, and more French in ideas and expression, is Beranger, author of *Chansons* and *Chansons nouvelles*, which are in higher favor with the public than they were with the attorneys of the crown, under the late dynasty. The monuments of distant periods are also brought to light by the industry of French scholars, as is shown by Méon's *Roman du Renard*, and Guillaume's *Recherches sur les Auteurs dans lesquels Lafontaine a pu trouver les Sujets de ses Fables*. Salfi's continuation of Ginguené's *Histoire Littéraire de l'Italie* is a valuable contribution to the history of literature. Schöll's *Hist. de la Littérature Grecque* (2d edition, 18mo.), Gaultier's *Essai sur la Littérature Persanne*, the valuable contributions in the *Journal Asiatique*, and those in the memoirs of learned societies and in the journals (*Revue Encyclop. Bulletin universel, par Férussac*), are well known to the literary public. Barbier's *Dictionn. des Ouvrages anonymes et pseudonymes*, 2d edit., Renouard's *Annal. de l'Imprimerie des Aldes*, 2d edit., as also the *Catalogue des Livres imprimés sur Vélin*, 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 ardor 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 matter, and confining ourselves to a mere 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, first vol. Boston, N. E. 1829), 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 *Philosophiæ naturalis Principia mathematica*. The results of those great calculations are also contained in his *Exposition du Système du Monde* (4th edit. Paris, 1813, 2 vols.), on which Hassenfratz's *Cours de physique céleste* (Paris, 1803) is a commentary. Francoeur'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 Carnot's *Principes de l'Équilibre et du Mouvement*. In the branch of astronomy, Lalande had already published the third edition of his *Astronomie*, 3 vols., 4to. (in 1792), when Delambre published his *Astronomie 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 *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 Fortification* (Paris, 1805, 2 vols. 4to.) deserves a favorable mention. 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 work, are indispensable as an introduction to the secrets of the higher analysis, which have been exposed in their widest extent by Lacroix, in his *Traité du Calcul différentiel et du Calcul intégral* (Paris, 3 vols. 4to.), which is surpassed by no work on this subject, in comprehensive and profound views. Among the elementary works, Bézout's *Cours de Mathématique*, 5 vols., has always been esteemed. Analytical geometry has been enriched by Biot, in his *Essai de Géométrie analytique* (5th edition, Paris, 1813); trigonometry by Lacroix in his *Traité de Trigonométrie rectiligne et sphérique* (6th edit., Paris, 1813), and descriptive geometry by the same, in his *Élémens de Géométrie descriptive* (4th edition, Paris, 1812). 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 artists from Greece to France. Under William the Conqueror, 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 paintings, which afterwards became known under the name of *Emaux 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 15th 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 was in his service for several years. Rosso dé' Rossi, known under the name of *Maitre 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 Corneille of Lyons, were the first native portrait painters of a 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 academical rather than in the poetic. Bramante, who was employed 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 Soucy, near Sens, who was living in 1589, commences the list of celebrated French painters. He was profoundly versed in the rules of perspective and architecture. 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 encouraged him and his contemporaries to emulate each 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-tapestry was established. Martin Fréminet, born in Paris in 1567, formed 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 coloring 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 corrupted taste. He had visited the East, and formed himself 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. Mola, Mignard, Du Fresnoy, Chaperon, Dorigny, and his own brothers, Aubin and Claude, were his pupils. His most celebrated contemporaries were Noël Jouvenet, Allemand, Perrier, Quintin Varin, &c. The last was the master of the great Nicholas Poussin (q. v.), 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 nothing pleased unless it bore the character of pomp and splendor. 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 a landscape painter. The other celebrated 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 colorist of the age. Claude Gelée, called *Claude Lorraine*, born in 1600, and died in 1682, the most eminent landscape painter of any age, formed himself entirely in Italy. Chaveau was distinguished for the strength and vigor 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 200 figures. He was born in 1610, and died in 1695. He also possessed a rare talent of copying old masterpieces. The grace of his style and the charms of his coloring are well known: they render him one of the first artists whom France has ever produced. Seb. Bourdon, too, deserves to be mentioned. The first rank, however, among the artists of that period, is due to Eustache le Sueur, born in 1617, died in 1655. 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 assiduity. His style is simple, noble, quiet; his drawing is correct; his coloring is tender, but wants force. His principal work is the life of St. Bruno, in 22 pictures. His works are little known out of France. Charles le Brun (q. v.), born in 1619, and died in 1690, is celebrated. All these artists had obtained their reputation before the accession of Louis XIV, whose love for pomp and magnificence 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 influence, Colbert established the French academies of art in Rome and Paris; the latter of which served to oppose the despotism of the academy of St. Luke in Paris. After Le Brun, the French artists deviated from 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, J. Mariette, and Gabriel le Brun. The artists of the following period of the most note, are Mola, the brothers Courtois, called *Bourguignon*, distinguished as

painters of battle-scenes; Noël Coypel and his son, Antoine, whose inventive imagination and beautiful coloring procured them universal applause, but who mistook theatrical exaggeration for natural expression. The family of Boullongne produced many excellent painters. Vivien, Jouvenet, Chéron, Parrocel, Silvestre, De Largillière, Rigaud, André, La Fage, were industrious and able artists of that period, yet not entirely free from affectation. Watteau, who painted only little sportive pictures, in a very affected style, became the favorite of his time. Under Louis XV, the taste for mirrors, for pastil painting, and for cameos, entirely supplanted true art. Loriot discovered at that time the art of fixing pastil-colors. The family Vanloo first began to arrest the decline of taste; they, with Ant. Pesne, Pierre Subleyras and Le Moine, might have succeeded, had not Christopher Huet and Francis Boucher effected the total ruin of the art. The latter, who was born in 1704, and died in 1770, devoted himself entirely to subjects of the lowest debauchery and immorality. No painter has ever profaned art like Boucher. Attiret, born at Dole in 1702, went, in 1737, at the invitation of the Christian missionaries, to Pekin, where the emperor of China and the grandees of the empire were so much pleased with his performances, that he established a school for drawing, and was constantly employed for the emperor, who intended to bestow on him the dignity of a mandarin. He died there in 1763. After a long reign of corrupt taste in France, the first appearance of a reform is presented in the works of Jos. Vernet (q. v.), a landscape painter, born in 1714, died in 1789. His representations of the sea, in all its different aspects, and his views of sea-ports, are inimitable. Strong feeling, a rich imagination, and an unremitted study of nature, were the causes of his success. Count Caylus, born in 1692, died in 1765, a zealous antiquary, did much for French art, and founded prizes for the encouragement of artists. Greuze, who is often called the *painter of the graces*, now appeared. He was born at Tournus in 1726, and died in 1805. He may be called the true *national* painter of the French; for his pictures, the subjects of which are entirely taken from domestic life, exhibit the most characteristic traits of the French manner of thinking and feeling. His pictures are executed in a simple and lovely style, but are not entirely free from affectation. He was the inventor of that popular species of works called *tableaux 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. 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 unremitted industry, his affection for, and paternal interest in, his disciples, are unparalleled in the whole history of art. Vincent, Regnault and Ménageot are distinguished contemporary artists. The revolution broke out, and, in 1791, 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 events of the revolution were the subjects that 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, Regnault 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, Hennequin, Berthon, Serangeli, Mad. Laville-Leroux, Mad. Angélique Mongez, Mad. Barbier-Valbonne, Van Brét and Richard (of Lyons), are among the most 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. Regnault 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 Fèvre, deserve mention. Regnault has educated many female artists; and several of his female pupils are very distinguished, as, Mad. Auzon, Lenoir, Romany, Mlle. Lorimier, Bénoit, Davin-Mirvaux, &c.—Among the older artists in Paris, Vincent, La Grénée, Taillasson, Peyron, Monsiau, Le Thiers and Prudhon (who has taken Correggio for his pattern), deserve honorable mention. Girodet (died in 1825), a historical painter, Isabey and 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 successor of Greuze; Mad. Kugler, a painter in enamel, and Desnoyers, and Berwick, engravers, 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, which so long graced the museum of Paris, under the superintendence of the zealous and talented 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 boldness. They are particularly distinguished for their excellence of design.

French Academy. A society of learned men and poets, having been formed in Paris, in 1629, cardinal Richelieu declared himself their protector, and a royal patent constituted them, in 1635, the *Académie Française*, and fixed the number of members at 40. 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 Séguier 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 and sciences. In 1804, Napoleon divided the national institute into four classes: the first consisting of 63 members, for the physical and mathematical sciences; the second of 40, for the French language and literature; the third of 40 members, 8 foreign associates and 60 correspondents, for ancient literature and history. The fourth class, for the fine arts, had 20 members, 8 foreign associates and 36 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.*)

French Politics. The kings of France aspired, at first, to independence, afterwards to absolute power, and finally, after the restoration of the house of Bourbon, to the independent authority of the legitimate throne. Capet and his immediate successors rendered themselves independent of the feudal aristocracy, by establishing a hereditary succession. From the death of Hugh Capet, in 997, the father was always succeeded by the son, for the space of 200 years. This introduced unity into the government of France, which had been divided among 40 great vassals of the crown. The establishment of the municipal corporations, in 1103, under Louis VI, contributed much to strengthen the royal authority against the feudal aristocracy. The power of the throne was still further increased by the devolution of 23 great feudal counties to the crown, during the reigns of Philip Augustus and his successors (1180—1310). At the same time, the king obtained jurisdiction over the territories of the barons; and the division of the kingdom into districts, in which justice was administered by the royal judges, gave consistence and unity to his power. In the same policy of aggrandizement and domination, the crown acquired, under the Valois, several prerogatives, as the right of coining money and imposing taxes. Philip the Fair (died in 1314), with equal success, rendered the royal power independent of the church. From that time, the privileges of the Gallican church were secured by several concordates with the popes; but it was not till the reign of Louis XIV, in 1682, that they became firmly established, by means of the celebrated Four Articles. The kings next aimed at absolute power. From 1302, the three estates of the nation had been assembled. The Valois used their efforts against them with various success, till Louis XI (1461—83) laid the

foundation of the absolute power enjoyed by his successors. The increase of the royal domains continued, and the gradual formation of a standing army (from 1444) furnished the throne with an instrument of oppression. The parliaments, also, gradually acquired political privileges, to the prejudice of the power of the states-general. But after the latter had been destroyed, the Bourbons also annulled the decisions of the latter by authoritative commands (in the *lits de justice*). The parliament, however, always recovered itself, till this contest became, at length, one of the causes of the revolution. From the time of Louis XI, French policy became deceitful and violent, and ambitious of foreign conquests, in order to divert the attention of the nation from the increase of the royal power at home. This tendency completed the overthrow of the rights of the nation. On the other hand, a warlike and ambitious spirit was awakened in the nation by the conquests of Charles VIII and his successors in Italy, from 1494. The disputes with Spain and Austria, to which the Italian expeditions led, made the French cabinet the centre of the modern political system of Europe. The military treaties with the Swiss (the first was concluded by Louis XI in 1475) showed the strong point from which France could shake Germany and Italy. The alliance of Francis I (died in 1547) with the Porte and the Protestants of foreign countries, taught her how to entangle all Europe in her snares. Her chief object became the weakening of Austria and the German empire by internal divisions, and the managing of the North by forming connexions with the factions that divided Hungary, Poland and Sweden. But, without any clear and consistent plan, she obeyed the warlike ambition of individual sovereigns, and the impulse of circumstances. The civil and religious wars, which placed the house of Bourbon on the throne, gave to the policy of the court, and to the nation in general, a stormy and violent character, which, at a later period, when Richelieu had made it subservient to the calculations of a superior mind, gave it that impetuosity which shook the balance of Europe. Richelieu (died in 1642) by disarming the Huguenots, combating the great, and subduing the parliaments, rendered the royal authority completely absolute, and established the ascendency of France in Europe by the humiliation of the house of Hapsburg, which had been the object of Henry IV. From this time, French policy assumed that diplomatic form, which gave to foreign affairs the first place in the administration of the state, and rendered every thing else subservient to them. But Richelieu had introduced into the French cabinet a Machiavelism, which spread fear and discord over all Europe, and which was entirely at variance with the open policy of Henry IV and his great ministers, Sully, Villeroi, Jeannin and D'Ossat, whose object was defence rather than conquest. Fearful of the consequences of peace, he thought himself secure only amidst the conflicts of nations, whom he set at variance with their princes by secret emissaries, or when upheld by a despotism which prostrated all resistance. French policy, from the peace of Westphalia, was, therefore, directed to the increase of power and influence abroad; and the selfish ambition of the ministers entangled the state in continual quarrels, in order to render themselves necessary to the king. French emissaries, secret and public, were scattered over Europe; even in Transylvania, Poland and Russia. They incited the parties against each other in Sweden; and French diplomacy extended its snares over Persia to India and China. Richelieu had given to French policy a character of boldness and craft, to which Mazarin afterwards added the forms of cold politeness. Timid and faithless in his measures, he took advantage of ambiguous expressions in treaties, or endeavored to gain time, and attain his purposes by art and cunning. This mixed character of violence and craft prevailed in French policy till the restoration in 1814, except that, according to circumstances, sometimes the one, sometimes the other of these characteristics predominated. Under Louis XIV, the splendor of the court, the prevalence of the French language and manners, and the military success of the nation, gave the French policy greater promptitude and decision. After the peace of Nimeguen, it became despotic. The ministers of Louis arbitrarily interpreted treaties. Violence, espionage, corruption and falsehood, even the encouragement of sedition in secret, were all practised, if necessary to gain their object. What particularly distinguishes French policy in the age of Louis XIV, is the introduction of the diplomatic artifice of subjoining to public treaties separate, and, soon after, secret articles. At an earlier period, Richelieu had concluded mock-treaties, in order to conceal the true ones. Although the French policy of conquest, at

that time, also included views of commercial advantages and naval and colonial power, yet these were not pursued on a steady plan, the increase of territory and continental influence being always the principal object. Among the distinguished statesmen of the French diplomatic school, since Richelieu, must be mentioned Bassompierre, the two D'Avaux, Servien, Lyonne, D'Estrade, Courtin, Pompone, Croissi, Torcy, and the cardinals Janson and Polignac. The noble and resolute Torcy (minister of Louis XIV) used to say, *Que le meilleur moyen de tromper les cours, c'était d'y parler toujours vrai.* On the other hand, after the death of Louis XIV, the French cabinet was disgraced by the cardinal Dubois. The grossest frauds, falsification of state-letters, the employing of abandoned men, and a general system of bribery and espionage, mark the administration of this venal minister, whose favorite principle, which he instilled into the king during his youth, was, *Que pour devenir un grand homme, il fallait être un grand scélérat.* Dubois, however, displayed great diplomatic skill and activity in the conclusion of the triple and quadruple alliances which gave France a 30 years' peace with England. It must not be forgotten, however, that the disinterested Pecquet labored with and under him. The French cabinet regained the esteem of Europe by the peaceable and honest character of cardinal Fleury. This cautious but too irresolute minister maintained peace until 1740, when he was involved in the war of the Austrian succession, through the ambition of the two Belle-Isle. Besides him, Morville, Chavigny, Villeneuve, the marquis D'Argenson and marshal Adrien de Noailles were distinguished for diplomatic talents. But soon after, under Bernis and other ministers, the French cabinet betrayed a weakness and want of address, which proceeded partly from military reverses. Louis XV, a king who usually said and did the contrary of what he thought, conceived the strange resolution of establishing a secret diplomatic cabinet, the existence and activity of which were not only unknown to his minister of foreign affairs, the duke de Choiseul, but were frequently directed against him. The prince de Conti conducted its foreign negotiations, and not without success, against Austria, for 12 years (1747—59). He formed, in Poland, that system which was called, in France, *the northern.* This secret diplomacy, at the head of which stood the count de Broglio, finally received a direction entirely contrary to the acknowledged interests of France, by the treaty between the court of Versailles and the cabinet of Vienna, concluded May 1, 1756, in which the marchioness de Pompadour had a great share. It was not seldom the case (as, for instance, in the singular correspondence concerning the abolition of the order of Jesuits), that the minister altered the letters of the foreign ministers, which he answered to suit his own purposes. Besides this, diplomacy was influenced by the intrigues of the royal courtiers and mistresses; one of the consequences of which was the exile of the duke de Choiseul in 1770, an able and experienced statesman, though a prodigal minister. He had counteracted the effects of the military reverses of France by his alliance with Austria and Spain in opposition to the preponderance of England, and by checking the progress of Russia by means of Poland and the Porte. After his dismissal, the feebleness and uncertainty of the French cabinet became more and more striking. There was nothing, therefore, to prevent the division of Poland. Count de Maurepas yielded to circumstances, instead of endeavoring to govern them. Count de Vergennes, who always observed the greatest dignity and delicacy, notwithstanding his industry, placed his policy rather in delays, and screened himself behind diplomatic forms. He was obliged to adopt this system by the domestic condition and foreign relations of France at that time. His greatest error, so far as royalty was concerned, was his support of the North American colonies against England. The immediate consequence was the French revolution. Among the later French statesmen who have distinguished themselves by political works, must be mentioned Praslin, Nivernois, Chavigny, Havrincourt, Vauguyon, Breteuil, Choiseul-Gouffier and Rayneval. French policy experienced a total change with the revolution. All the slumbering energies of genius and power, boldness and cunning, were at once awakened. The revolutionary policy changed its character at different epochs of the revolution. The majority of the first, or constituent assembly, had the best intentions; but, inexperienced and impetuous, they undertook a work above their strength. By the establishment of a diplomatic committee, they intruded into the secrets of the cabinet of an irresolute king, whose weakness had already appeared in the disturbances which took place in Holland in 1788, and had rendered him

contemptible in the eyes of the nation. Two ministers, Montmorin and Delessart, were obliged to yield to the popular hatred. Dumouriez was then placed at the head of foreign affairs (1792), and with him the new revolutionary diplomacy commenced. He introduced into the negotiations a language offensive to the dignity of sovereign powers, the first consequence of which was a rupture with Sardinia. When the sum of 1,500,000 for secret expenses was increased to 4,500,000 livres, he endeavored, by separate treaties with the German princes, to secure the neutrality of the empire, which the violation of existing treaties by the national assembly had provoked. He then challenged Austria to a war. The management of foreign affairs, having been wrested from the hands of the king, was conducted entirely according to the impulses of national pride, which had been wounded by the proclamation of the Prussian commander, the duke of Brunswick, of July 25, 1792. The whole political system of Europe was finally overthrown with the destruction of the French monarchy; and the peace of Basle, in 1795, was the first triumph of the revolutionary diplomacy over the cabinets of the coalition. But when the former, overpowered by the commercial and colonial policy of England, was incited to new conquests on the continent, the French continental system became the consequence. The directory endeavored to establish and extend it, by founding republics and spreading republican ideas—Napoleon, with better success, by alliances, and by incorporating the conquered territories with France. The rights of nations and good faith were equally disregarded. By holding out the prospect of increase of territory, by the show of liberal ideas, or by threats, the princes were divided from their subjects, and subjects from their princes, till, at last, both princes and subjects were overcome. The consequences of this cunning on the one side, and the grossest error on the other, are too well known. But Napoleon's ambition overthrew his own throne. In vain the prudent Talleyrand and the cautious Fouché warned him. Pitt kept alive the hopes of the cabinets, Spain the hopes of the nations; and when the flames of Moscow blazed over all Europe, and the enthusiasm of the people of the north of Germany was awakened, the military government fell to pieces. After the overthrow of Napoleon, the courts returned to the former policy. Talleyrand's principle of legitimacy reëstablished the throne of the Bourbons, and with it the old French diplomacy. The right of nations to give a constitution to themselves and to their kings, was wrested from them. A secret party, no less violent than artful, has labored ever since to restore the former state of things. On the other hand, the bold language of liberal ideas was heard in both the chambers, and Louis XVIII, by the advice of Decazes, grasped for a time the anchor of the constitution, to strengthen the tottering throne in the conflict of parties. The domestic policy might now be called *constitutional*, while the foreign policy was still fettered by the treaty of Chaumont. But when the French cabinet was leagued with the four other principal powers, by the congress of Aix-la-Chapelle, in 1818, and quiet appeared to be restored in the interior, the government then aimed at a greater independence of the chambers, and prevailed by destroying the form of election which had been before established. From that time, France, in her foreign policy (at Laybach and Verona), inclined more to the system of the three great continental powers, than to the principles of the English ministry. The invasion of Spain by the French army, under the duke of Angoulême, in 1823, was an act in which the French government went to the full length of the principles of legitimacy and the right of armed interference maintained by the holy alliance. The same devotion to the principles of legitimacy prevented them, for a long time, from acknowledging, in any manner, the independence of the South American republics, notwithstanding the earnest petitions of the mercantile classes. At length, in 1827, they consented to accredit, publicly, such agents as the new republics might send to reside in France, although regular diplomatic relations have not as yet been established with these countries. When the troubles broke out in Portugal, in 1826, the firm attitude of England prevented any interference on the part of the continental powers in the affairs of that country, and the French government cooperated with the English in the endeavor to prevent any such interference on the part of Spain. In completing the independence of the Greeks by the expedition sent to the Morea in 1828, as well as in the part which the French fleet had taken the year before in the battle of Navarino, the French government coöperated in the policy of Russia. The foreign policy of the new dynasty which now occupies the

French throne, we have reason to hope will be of a noble and high-minded character. (See Flassan's *Histoire générale et raisonnée de la Diplomatie Française*, (until 1772, 2d edition, Paris, 1811, 7 vols.), and the sketch of the history of France, in the preceding part of this article; also the articles *Louis XVIII*, and *Charles X.*)

French Church. (See *Gallican Church.*)

French Theatre. (See *Paris Theatre.*)

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.*)

France, Isle of, or Mauritius; 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 great extent. Some 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 little 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 pineapple grows spontaneously in very great perfection. The island produces little grain, or any other useful vegetable, except the potato, 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 coffee, 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 10,359 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 Lancastrian method of teaching is much in use. The accounts of the government are kept in piastres of 100 cents, and those of the merchants in piastres of 10 livres, or 200 sous. Since 1820, the medium of exchange has been principally paper money, payable at sight in Spanish dollars. The island was discovered in the 16th century, by don Pedro Mascarenhas, a Portuguese, and called *Ilha do Cerno.* 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 English, and confirmed to them by the peace of 1814.

Franche-Comté, or Upper Burgundy; an ancient province of France, forming, at present, the departments of the Doubs, of the Upper Saône, 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 Nimeguen, in 1678.

Francia, José Gaspar Rodriguez de, celebrated as dictator of Paraguay, is a native of that country, whither his father emigrated from France. He was originally intended for the church, and, after a preparatory education in Assumption, went to the university of Cordova del Tucuman, to pursue the study of theology. He proceeded so far in the execution of this design as to take his degree of doctor of theology; but the study of the canon law having given him a taste for jurisprudence, he resolved to change his professional views, and to become a lawyer. As an advocate, doctor Francia was distinguished by singular disinterestedness and generosity of temper, not less than ability and integrity. Moderate in his wants, and peculiarly studious and retired in his feelings, he remained a bachelor; and to his secluded habits may be ascribed a part of the inflexibility of his character. Add to which, that he is constitutionally subject to fits of melancholy, bordering closely on mental alienation, which occasionally appears in the eccentricity of his conduct. On arriving at manhood, he was elected a member of the *cabildo* of Assumption, and subsequently held the office of *alcalde*, and in these situations exhibited the qualities of uprightness, decision, and independence,

which gained him the esteem of his countrymen. Upon the establishment of a revolutionary junta in Paraguay, by a convention called in 1811, D. Fulgencio de Yegros was chosen to be president, and doctor Francia secretary. This organization continued two years, during which the government was in effect administered by Francia, who was the only man of business in the junta, his colleagues having neither taste nor talent for civil affairs. It frequently happened, however, that the latter opposed the wishes and plans of Francia. On these occasions, he was inflexible; and his remedy was to retire into the country, and declare, that he would have nothing more to do with the government. His associates, conscious that they could not get on without him, were then compelled to purchase his return by compliance. In 1813, another convention was called, at the instance, probably, of Francia, who proved to be almost the only member of it versed in books, or in business, and who, of course, exercised great influence over its deliberations. He persuaded them to discontinue the junta, and to vest the government in two annual consuls. Yegros and Francia were selected for the first consulship; and it was arranged between them, that the supreme power should be exercised by each in turn for four months in succession. Francia contrived that his turn should come first, and, of course, two thirds of the year fell to his share. Not content with this, when congress assembled anew at the expiration of the consular year, he persuaded them to alter the form of government again, by abolishing the consulship, and committing the executive power to a dictator. These primitive legislators obtained their political doctrines from Rollin's Roman History, which doctor Francia brought forward as a work of authority, in regard to the function and name of their magistrates. The members of the congress fell in readily with all his schemes, but seemed to be wholly unsuspicious that Francia expected or desired to be dictator himself. Accordingly they selected Yegros for the office, in the simplicity of their hearts, and would have chosen him, if doctor Francia had not managed to defer the ballot two several times, and thus had opportunity of drilling them a little in the duties they were appointed to perform. He was unanimously chosen dictator for the period of 3 years; and although his competitor, Yegros, exhibited a disposition to resist by force the authority of the new Cæsar, yet the latter succeeded in averting the storm, and quietly took upon himself the office to which he was elected. Francia now fixed his residence in the Spanish government house; reformed his manner of life, which previously had been somewhat loose; began to manifest that austerity of character for which he has ever since been distinguished. By various arts, familiar to usurpers, he contrived to consolidate his power, and to prepare the minds of his countrymen to perpetuate it in his person. It is undeniable that he displayed uncommon sagacity and penetration, ingenuity in devising, and energy in executing his measures; and the congress of 1817 made no difficulty in creating him perpetual dictator. After this, he threw off the mask, attempting no concealment of the darker traits of his character. Conspiracies having been entered into among the principal citizens, to put an end to his power, and Francia, with his usual good luck, having detected the plots before any thing was accomplished, the dictator sacrificed great numbers of the conspirators and other suspected persons, and cemented the fabric of his despotism with the blood of his worthiest countrymen. Thenceforth the internal policy of the dictator was that of a jealous tyrant, who governed the country with a singular mixture of capricious and fantastic despotism, united with peculiar sagacity, or, perhaps we should rather say, cunning, in the direction of public affairs. A continued succession of arbitrary measures, pursued with remorseless cruelty, broke, at length, the spirit of his people, and left him nothing to fear from them. Concentrating the functions of state in himself, and securing the obedience and attachment of a small standing army of 5000 men, he has continued to reign undisputed master of Paraguay. Passing over many minor acts of singular caprice, of no consequence but as exhibiting the eccentricity of his temper, and serving to show the abject condition of the country which he rules, we adduce only that remarkable feature which distinguishes his foreign policy, and has communicated an air of mystery and of interest to his name and government. He has rigorously prohibited all intercourse between Paraguay and the neighboring countries. The republic of La Plata made an attempt to force the province of Paraguay into the confederacy; but their troops were compelled to retire in disgrace, and they have since

been content to seek for a peaceable connexion with the province, but without the least success. Until very recently, no individual, whether native or foreigner, has been permitted to quit Paraguay. Men of science even, who chanced to enter the country, have been detained in obedience to this extraordinary system; of which Bonpland, the companion of Humboldt, is a well known example. (This gentleman was liberated in 1829.) All that we know of his government is derived from the narrative of MM. Rengger and Longchamp, Swiss physicians, who unfortunately fell into his power, and suffered a detention of six years before they were allowed to leave the magic circle of his suspicious tyranny.

Francis of Assisi, St., was born at Assisi, in Umbria, in 1182, and received the baptismal name of *John*. He was afterwards called *Francis*, 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 Baillet, with the sign of a cross upon his shoulder, and in a stable; in which latter circumstance he resembled the Savior. 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 in Apulia, 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 1210, his order was confirmed by pope Innocent III. The next year, he received, from the Benedictines, a church in the vicinity of Assisi, which was the cradle of the order of the Franciscans (q. v.) or Minorites. 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 them, "Let us win the great by our humility and respect, and inferiors 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 himself into the flames. The sultan, however, 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 beheld, in a vision, a crucified seraph, who perforated 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 doubtless a man of great talents, who was actuated by the noble idea of teaching Christianity to the poor and neglected of his time. (See *Franciscans*.)

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 monastic life. At the age of 14, 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 20th year, when so great a number of persons came to dwell in the solitude around him, that he obtained, from the archbishop of Cosenza, 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. Thus was founded the new order, which was, at first, called the *hermits of St. Francis*, and was confirmed, in 1474, by pope Sixtus IV. In 1493, the statutes of the order were again confirmed by Alexander VI, under the name of the *Minims* (Latin, *minimi*, 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 prepared with milk, excepting in cases of sickness. He practised still greater austerities himself. This extreme severity did not prevent the increase of the order. The fame of his miraculous cures reached Louis XI of France, then dangerously sick; and that superstitious tyrant invited him to France. But it was not until he had received the commands of pope Six-

tus IV, that Francis set out for France, where he was received with the highest honors. 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 in the park of Plessis-lès-Tours, and one at Amboise, and loaded him with honors and tokens of veneration. Other princes, also, gave the Minims proofs of their favor. The king of Spain wished to have the order introduced into his dominions, where they were called the *brothers of victory*, in commemoration 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-lès-Tours, April 2, 1507, at the age of 92. Twelve years after his death, he was canonized; and the Catholic church celebrates his festival April 2. (See *Minims*.)

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 Angoulème, and his mother, Louisa of Savoy. He ascended the throne, January 1, 1515, at the age of 21, 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 duke 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 valor and presence of mind. The old marshal Trivulzio, who had fought 18 battles, declared that 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 Genoese declared for Francis. Leo X, alarmed at his success, 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, Bouchain 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 over the Alps, took Toulon, and laid siege to Marseilles. 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 imprudent enough to send 16,000 of his troops to attempt the conquest of Naples, which left him too weak to withstand the forces of the emperor, and he was entirely defeated at Pavia, February 24, 1525. He himself, after having two horses killed under him, fell, with his principal officers, into the hands of the enemy. Though surrounded, and without hope of rescue, he yet refused to surrender his sword to a French officer, the only one who had followed the constable. He could not endure the thought that Bourbon should receive this proof of his humiliation. De Lannoy, viceroy of Naples, was then called, to whom he gave up his sword. On this occasion, he wrote to his mother, "All is lost except our honor." Francis was carried to Madrid, and kept in confinement. He could recover his liberty only by signing the severe terms of the treaty of January 14, 1526, by which he renounced his claims to Naples, Milan, Genoa and Asti, the sovereignty of Flanders and Artois, promised to cede the duchy of Burgundy, and to pay 2,000,000 crowns. As security for the fulfilment of these conditions, he was obliged to give up his two youngest sons (for whom he was exchanged on the frontiers) as

hostages. But when Lannoy, who accompanied him to Paris, as the ambassador of the emperor, demanded the surrender of Burgundy, Francis led him into the assembly of the Burgundian estates, who declared that the king had no right to dismember the monarchy. In addition to this, Lannoy had the mortification of witnessing the proclamation of the holy league, consisting of the pope, the king of France, the republic of Venice, and all the Italian powers, who agreed to check the advances of the emperor. Francis, the soul of this league, commanded Lautrec to occupy a part of Lombardy (1527), and thus delivered the pope from the imperial troops. He would likewise have taken Naples, had not the plague destroyed almost the whole of the French army, with their general (1528). This loss hastened the peace of Cambray, signed in 1529. The king of France resigned a part of his claims, and retained Burgundy, but was obliged to pay 1,200,000 crowns as a ransom for his two sons, and married Eleonora, widow of the king of Portugal, and sister of the emperor. But this peace was of short duration. Milan, the constant object of contention, and the grave of the French, still excited the ambition of Francis. In 1535, he once more invaded Italy, and made himself master of Savoy. But the emperor made a descent upon Provence, and besieged Marseilles. In the mean time, Francis entered into an alliance with Soliman II. The imperial army could not maintain itself in Provence. At length, at a conference, which took place at Nice, between the king and Charles, through the mediation of the pope (1538), a truce of 10 years was concluded. The emperor, who some time after passed through France, to chastise the rebellious citizens of Ghent, in a personal interview with Francis, promised to invest one of his sons with the sovereignty of Milan; but no sooner had he left France than he refused to fulfil his promise. In 1541, the imperial governor del Guasto caused the French ambassadors, who had been appointed to Venice and Constantinople, to be murdered on the Po, and war was again kindled. Francis sent armies into Italy, Roussillon and Luxembourg. Count d'Enghien defeated the imperialists at Cerisoles, in 1544, and rendered himself master of Montferrat. France now promised herself important advantages from an alliance with Sweden and Algiers, when her hopes were destroyed by the alliance of Charles V and Henry VIII, king of England. The allies invaded Picardy and Champagne. The emperor rendered himself master of Soissons; the king of England took Boulogne. Fortunately for France, the union of the Protestant princes of Germany against the emperor prevented him from 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 was then considered incurable. He 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 by posterity. 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 1534, 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, king of France, son of Henry II and Catharine of Medici, born at Fontainebleau, January 19, 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 17 months, were sown the seeds of those evils which afterwards desolated France. The uncles 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 the protectors of the Catholics. 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 Renaudie the ostensible leader. The prince of Condé, as the head of the Calvinists, was already condemned to die by the hands 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 18 years, leaving the kingdom loaded with a debt of 43,000,000, and a prey to all the miseries of civil war.

Francis I, Stephen, 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 duchies of Lorraine and Bar, of which, however, he did not long retain possession. In 1733, Stanislaus Lesczinsky 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 peace of Vienna, 1735, 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-marshal 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 declared by his wife coregent of all 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 Innspruck, August 18, 1765. (For the memorable events of his 20 years' reign, see *Theresa, Maria.*)

Francis, sir Philip, a celebrated politician, son of the translator of Horace, was 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 that nobleman; and, in 1773, he 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, and he was honored with the order of the bath; but the remainder of his life was undistinguished by any circumstances of importance. He died in 1818. He published several political pamphlets, and some persons have supposed him the author of the famous Letters of Junius.

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., born February 12, 1768, is 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 assumed (decree 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. He is 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. At the age of 20, Francis accompanied his uncle on a campaign against the Turks, and in the following year received the chief command of the army, in which he was united with Laudon. After the death of Joseph (1790), he engaged in the administration of the government until the arrival of his father, on whose death, in 1792, he became emperor. France declared war against him (April 20, 1792), as king of Hungary and Bohemia. (See *Germany*.) Prussia at first took part with him, but afterwards concluded a separate peace with the republic. Still, however, he continued the war with energy. In 1794, he placed himself at the head of the army of the Netherlands. Animated by the presence of the monarch, they defeated the French (April 26) 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; but, 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 bivouac 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 mediation between the contending parties, but in vain. However, the proclamation of Francis, 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, 13 children, of whom 7 are still living, and among them the crown-prince Ferdinand Charles (born in 1793). By his first marriage with Elisabeth, princess of Würtemberg, and by his third, with Maria Louisa Beatrix, youngest daughter of his uncle Ferdinand, arch-duke of Austria, duke of Modena and Brisgau, concluded in 1808, he had no children. His fourth wife is Charlotte, second daughter of Maximilian Joseph, king of Bavaria (divorced from her first husband, the present king of Würtemberg, in January, 1816, and married to the emperor Francis in November, 1816). The family tie, that was to bind Austria and France, could not appease the ambition of his son-in-law; and, although the emperor Francis, at the memorable interview at Dresden, in 1812, united with him, yet this union was of short duration. In 1813, Francis I entered into an alliance with Russia and Prussia against France, and was present to the close of the contest. During a space of eight months (from October, 1814, to May, 1815), the greater part of the European sovereigns were assembled at the congress in his capital. By the treaties of peace concluded in Paris, and the treaty concluded with Bavaria, April 14, 1816, Francis I has become the sovereign of a country such as none of his ancestors ever swayed. (See *Austria*.)

Franciscans, or Minorites (*fratres minores*, as they were called by their founder, in token of humility), are the members of the religious order established by St. Francis of Assisi (q. v.), in 1208, by collecting followers near the church of Porticella or Portiuncula, at Assisi, in Naples. The order was distinguished by vows of absolute poverty, and a renunciation of all the pleasures of the world, and was intended to serve the church by its care of the religious state of the people, so neglected by the secular clergy of that time. Learning and intellectual accomplishments its members were not to aim after. St. Francis likewise strictly prohibited his followers from possessing any property whatever. The rule of the or-

der, sanctioned by the pope, in 1210 and 1223, destined them to beg and to preach. The popes granted them extensive privileges, which soon became equally burdensome to the laity and clergy, particularly as they were subject to no authority but that of the pope. They often encroached on the rights of the regular pastors. Indulgences were granted to them more freely than to any other order; hence the expression *Portiuncula indulgence.* The order soon comprised thousands of monasteries, all established by alms and contributions. The rule of poverty, so strictly enjoined by the founder, was somewhat relaxed, and the monasteries were permitted to hold property. This change, however, was not effected without divisions within the order itself. Learning, also, did not long remain excluded from their monasteries, and distinguished scholars, as Bonaventura, Alexander de Hales, Duns Scotus, Roger Bacon and others obtained a celebrity which justified the admission of the Minorites to the chairs of the universities. They defended the immaculate conception of the Virgin Mary against the Dominicans; their animosity against whom has been maintained even down to a late period, in the disputes between the Scotists (Franciscans) and Thomists (Dominicans). With their rivals, they were, from the 13th to the 16th century, the confessors of princes and the rulers of the Christian world. They were then superseded by the Jesuits; but, by a prudent compromise with them, they retained more influence than the Dominicans. Several Franciscans have risen to the highest offices of the church; the popes Nicholas IV, Alexander V, Sixtus IV and V, and Clement XIV, were from this order. Some members of the order declared this to be an unpardonable deviation from its rules, and therefore formed particular fraternities, such as the Cæsarinians and Celestines in the 13th century, the Spirituals in the 14th century. In 1363, the dissidents were united, by St. Paul, in the fraternity of the Soccolanti, or sandal-wearers. In 1415, they were constituted, by the pope, a separate branch of the Franciscans, under the name of Observantines, which, in 1517, when Leo X effected an accommodation between the different parties, retained the superiority. Since that time, the general of the Observantines has been the general 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 strictly meditative life), belong to the brethren of the *observance.* 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 *cismontane*, who have 66 provinces, now generally in a feeble state, in Italy and Upper Germany, in Hungary, Poland, Palestine and Syria; the *ultramontane*, with 81 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 30 provinces, with 100 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 woollen 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 18th century, they had 1700 convents, with 25,000 members.

St. Francis himself collected nuns in 1209, who were sometimes called *Damianistines*, from their first church at St. Damian, in Assisi. St. Clare was their first 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. Isabelle, daughter of Louis VIII of France, as their mother. Other branches are the female Capuchins and barefooted nuns, of the strictest observance; also the Annuntiata. In the 18th century, there were 28,000 Franciscan nuns, in 900 convents. 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 *Tertiarians*, and were very numerous in the 13th century. From them proceeded several heretical fraternities, as the *Fraticelli*, *Beghards*, and the

Picpuses, as the strict Tertiarians in France were called. The whole number of Franciscans and Capuchins, in the 18th century, amounted to 115,000 monks, in 7000 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 education of the young.

FRANÇOIS DE NEUFCHÂTEAU, 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 13th year, he had published a collection of poems, of which Voltaire expressed a favorable 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 St. Domingo, where 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 Pamela, performed in 1793, having given offence on account of its moderation, 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 Fructidor, he became a member of the directory, in the place of Carnot. But he was soon removed on account of his moderation, and was commissioned to obtain from count Cobentzl, at Seltz, 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 exhibition of products of domestic industry, 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 1808, 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 *Fränkischer Kreis*, circle of Franconia); one of the 10 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 Suabia, the Rhenish provinces, Saxony, Bohemia, and Bavaria. It belongs, at present, mostly to Bavaria. It formerly contained 1,500,000 inhabitants, on about 10,500 square miles.

FRANCONIA; a post-town of New Hampshire, in Grafton county, 28 miles north-east of Haverhill, 74 north of Concord; lat. 44° 10′ N.; population, 373. The township of Franconia is little cultivated, but it is noted for its minerals, particularly iron mines, and for its sublime mountain scenery. The Great Haystack mountain is situated in the north-east part of the township; and close by this mountain, near the Franconia notch, there is a singular curiosity, called the *Profile*, or *Old Man of the Mountain*. (See *Haystack Mountain*.) Two companies have been formed for the manufacture of iron from the mines in Franconia, viz., the New Hampshire iron factory company, and the Haverhill and Franconia company. The works of the former company, which alone are now in operation, are situated on the south branch of the Lower Amonoosuck. The hill from which the ore is obtained, is situated four miles south-west of the iron works. The ore, which is abundant and exceedingly rich, is found in a wide vein, imbedded in solid rock, and it has been excavated to the depth of about 170 feet. The works, however, have not proved lucrative to the proprietors, on account of the expense of procuring the ore, and, more especially, for the want of a ready market for the iron, and a water communication for transporting it. Three miles south of these iron works, a copper mine has been discovered, but it has not yet been wrought.

FRANCONIAN WINES; German wines produced chiefly in the Bavarian circle of the Lower Maine. 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 flavor. Other good wines are the *Werthheimer* and *Dettelbacher*. As Würzburg is the nearest large city, and carries on a considerable trade in these wines, they are often called *Würzburg 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; a German prefix to many 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.—*Frankenthal*, valley of the Franks; *Frankenhausen*, dwelling of the Franks; *Frankenstein*, stone or rock of the Franks.

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 14th year, he was ready to enter the university. He studied theology and the languages at Erfurt, Kiel and Leipsic. In 1681, he began to lecture at the latter university, on the practical interpretation of the Bible, and met with so much success, that he was attacked on all sides; and the celebrated Thomasius, then residing at Leipsic, undertook 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 Mentz, to whose jurisdiction Erfurt then belonged, ordered him to leave the city within 24 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 Glaucha, 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, in 1694, he made 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 visited on his death bed, left him the recipe for compounding several medicines, which afterwards 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 64 years.

Franke's 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 for 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 from 9 to 10 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 a learned education. 5. The *Canstein Bible Press* (see *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 this 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 *Hallische Buchhandlung* (book establishment), one of the largest in Germany. It has published all the school-classics at very low prices. The *pædagogium* also brings in an income to the charitable institution, and contributes to its support. Charitable contributions also continue to be received.

FRANKFORT; a post town of Kentucky, the seat of the government of the state, in Franklin county, on Kentucky river, 60 miles above its confluence with the Ohio, 22 W. N. W. Lexington, 52 E. Louisville; lon. 84° 40′ W.; lat. 38° 14′ N.; population in 1820, 1679. (For the population in 1830, see *U. States.*) It contains a state house, a court house, a penitentiary, a jail, a state bank, a theatre, &c. The state house is built of rough marble, 86 feet by 54. The town contains several rope-walks and bagging manufactories, tobacco ware-houses and powder mills. The site of the town is a semicircular alluvial plain, 200 feet lower than the ground in its rear. The river, which is here 100 yards wide, having bold limestone banks, forms a handsome curve, and waters the southern and western parts of the town. The bottoms on both sides of the river are very broad, and are subject to inundation. For several years after the settlements commenced, the inhabitants were afflicted with bilious complaints; but the low situations have been rendered healthy by draining. Steam-boats of 300 tons come up the river as far as this town, when the water is high.

FRANKFORT ON THE MAINE; one of the four free cities of Germany, and the seat of the Germanic diet, situated on the Maine, 50° 8′ N. lat., 8° 36′ E. lon., in a charming country. Sachsenhausen 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 95 square miles, 54,000 inhabitants, 4493 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 imperial city in 1154, and its 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 Carlovingians. 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, reëstablished 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 an extensive commerce. The fairs of Frankfort are celebrated. (See *Fair.*) But banking is the most important business in this place. The Rothschild family originated here. Bethmann, also, was one of the most eminent bankers of his time. Many of the richest persons in this place are distinguished for their love of the fine arts. There are several very fine collections in the city, and that of Bethmann was truly grand. Frankfort has several antiquities, worth seeing. It is Göthe's birth-place. The hotels are generally considered among the finest in the world, and afford a school for German innkeepers.

FRANKFORT ON THE ODER; a city in the middle mark of Brandenburg, Prussia, with 16,000 inhabitants and 1306 houses. It has a fair, which was formerly important. Its university was transferred to Breslau in 1810, and united to the Catholic university, already existing in that place.

FRANKINCENSE (called also *olibanum*, or simply *incense*) is a gum-resin, which distils from incisions made in the *boswellia thurifera*, a tree somewhat resembling the sumach, and belonging to the same natural family, inhabiting the mountains of India. It comes to us in semi-transparent, yellowish tears, or sometimes in masses, possesses a bitter and nauseous taste, and is capable of being pulverized. When chewed, it excites the saliva, and renders it white; and, when burnt, it exhales a strong aromatic odor, on which account it was much employed in the ancient temples, and still continues to be used in Catholic churches. Formerly it was frequently administered medicinally, but myrrh and other similar articles have now taken its place. That which is brought from Arabia is more highly esteemed than the Indian. The *boswellia* has pinnated leaves, the folioles of which are pubescent, ovate acuminate and serrate, and very small flowers disposed in simple axillary racemes.

FRANKING LETTERS. (See *Post-Office.*)

FRANKLIN, Benjamin, one of the great-

est benefactors of America, was born in Boston, Jan. 17, 1706. His father, an English non-conformist, who had emigrated to America to enjoy religious freedom, was a tallow chandler and soap-boiler. Benjamin, the fifteenth of seventeen children, was put to a common grammar school at the age of eight years; and, from the talents he displayed in learning, his father conceived the notion of educating 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 measure gratified, and he devoted his nights to perusing such books as his limited resources enabled him to obtain. 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 gives 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 Port-Royal Logic, and Xenophon's *Memorabilia.* Happening to meet with a work which recommended vegetable diet, he determined 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 Collins 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. Franklin, having 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 elude this prohibition, young Franklin was made the nominal editor, and his indentures were ostensibly 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 a retreat to some other city. He therefore secretly embarked aboard a small vessel bound to New York, without means or recommendations; 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 Warville) 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 governor of Pennsylvania, was induced by his promises to go to England, for the purpose of purchasing types, to establish himself in business. On arriving in London (1725), he found that the letters, which had been delivered him, had no reference to him or his affairs; and he was once more in a strange place, without credit or acquaintance, and with little means. But he soon succeeded in getting business, and, although at one time guilty of some excesses, he afterwards became a model of industry and temperance, and even reformed his brother printers by his example and exhortation. While 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 18 months in London, he returned to Philadelphia, in his twenty-first year, in the capacity of clerk to a dry-goods shop; but he soon returned to his trade, and in a short time formed an establishment in connexion with a person who supplied the necessary capital. They printed a newspaper, which was managed with much ability, and acquired Franklin 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 systems 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 elected a member 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 having made some progress in those languages, he applied himself to the Latin. He was the founder of the university of Pennsylvania, and of the American philosophical society, and one of the chief promoters of the Pennsylvania hospital. In 1741, he began to print The General Magazine and Historical Chronicle. In 1742, he invented the Franklin stove (see *Fire-place*), for which he refused a patent, on the ground, that such inventions ought to be made at once subservient to the common good of mankind. 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 electricity, 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 practical application he made of his new discovery, in the invention of the lightning-rod. Franklin had ever shown himself a zealous advocate 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, chosen by the provincial assemblies: the council was to lay taxes for all the common exigencies. The plan, though unanimously sanctioned by the congress, was rejected by the board of trade, as savoring too much of the democratic, and by the assemblies, as having too much of prerogative in it. In 1751, he was appointed deputy postmaster-general, and, in this capacity, advanced 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; and, having received a commission as a commander, 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 was then a proprietary government, and the proprietaries claimed to be exonerated from taxes. In consequence of the disputes to which this claim gave rise, colonel Franklin was sent out (in 1757) to the mother country, 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 appointed agent of the provinces 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 a regal 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 (see *United States*). 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 adoption of that measure, and, from its passage (1765) to its repeal (1766), was indefatigable in his exertions to prove the unconstitutionality and impolicy 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 Feb. 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, the information he communicated was so varied, comprehensive and luminous, on all points of commerce, finance, policy and government, that the

effect was irresistible; the repeal was inevitable. On the passing 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 inculcate moderation and patience, as well as constancy and unanimity, on America. He endeavored, 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 of an Englishman." His transmission of the celebrated letters of Hutchinson and Oliver (1772), which had been placed 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 indignant petition of the assembly of Massachusetts, in consequence of these letters, was presented by him to the ministry, and he was immediately made the object of the most virulent abuse, 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 found impossible to intimidate: "any reward, unlimited recompense, honors 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 honor, not to the English nation only, but to human nature." 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 favor 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 gaining the confidence of the count 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 endeavored 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. Emissaries 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 *dragooned* nor *bamboozled* out of their liberty." The next act of the British ministry was to endeavor to separate America from France, and to excite a jealousy between the two countries; but all these wiles were defeated by the firmness and prudence of the American ministers. After the conclusion of the treaty with France, Franklin had been 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 negotiations (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 Sweden, and one with Prussia. 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, gayety and richness of his conversation,—all contributed to render him an object of admiration to courtiers, fashionable ladies and *savants*. 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 then formed. 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, 130 W. N. W. Potosi; lon. 92° 54′ W.; lat. 38° 57′ N. Population in 1821, 1800. (For the population in 1830, see *United States*.) This town was laid out in 1816, and, in 1821, contained about 500 buildings, some of them handsomely built of brick, others framed, but the greater part of logs; also a court-house, a jail, a market-house, a land-office, an academy, a printing-office, &c. It is regularly laid out, the streets 82½ feet wide, with a public square of 2 acres, for the erection of public buildings. It has a healthy situation, in a district very fertile and rapidly settling. At the above date, it was the second town in business and importance in Missouri, and the western limit of steam-boats and other boats.

Franklinite. This mineral is found crystallized in the form of the regular octahedron (its primary 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, 66; 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 4th century, they made invasions into Gaul, and, in the beginning of the 5th century, they first entered Belgic Gaul. (See *France*.) The extensive district which the Franks, at a later period, wrested from the Allemanni, on the Rhine, constituted the *Francia Rhenana*. The country, since called *Franconia* (*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 9th century, we find a duchy of Franconia 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 17th century, after which they sunk in repute.

Frascati; one of the most charming spots of Italy, on the site of the ancient Tusculum, 11 miles S. E. from Rome. Tusculum, according to tradition, was built by Teligonus, 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 Borghese family. Fountains, 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 Tusculum are still visible, near which are the ruins of Cicero's villa, those of a small amphitheatre, baths, &c.

Frasera Caroliniensis, or American Colombo, 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; there are four stamens and one style. It 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 12th to the 15th 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 Beguines (q. v.) and Beghards, the Brothers and Sisters of the Free Spirit, the Apostolic Brethren, the Flagellants (q. v.), and Brothers of the Cross. (See the article *Franciscans*, whose third order presented similar appearances.) The church tolerated them for a longer or shorter time, 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 13th to the 15th century. They built bridges and hospitals, maintained ferries, 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 Hermandad (q. v.) in Spain; the Familiars and Cross Bearers 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 Alexius, their patron saint, and were at first (in the beginning of the 14th century) principally composed of persons from the lower classes of the people in the Netherlands. They were afterwards increased by the addition of a 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 government. On account of their mean habitations, they were also called *Cellites;* and, from their low tone of singing (in German, *Lullen*) at interments, *Lollards;* also, from their temperance, the *Matemans.* They still exist, in the societies for burying dead bodies, in Antwerp, Utrecht 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 as penances, in all the principal cities in Italy (in Rome alone there are more than 100 fraternities), 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 Henry III), the black fraternities of Mercy and of Death, the Red, the Blue, the Green, and the Violet Penitents, so called from the color of their cowl; the divisions of each were known by the colors of the girdle or mantle. The principal fraternities are distinguished by certain privileges. The spiritual and secular authorities favor 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 Recke.) Among the principal societies of this kind are the Fraternity of the Holy Trinity, founded at Rome, 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; and 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 instructers. 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. Pius 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 cowls, and have a distinct general. The Sisters of Charity form independent societies; among their establishments is the great hôtel 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 *frate, brother* or *monk;* the name given, towards the end of the 13th century, to wandering mendicants of different kinds, and also to certain Franciscans, who pretended to practise the rules of their order in their full rigor. 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.*

Fraud. All frauds, or attempts to defraud, which cannot be guarded against by common prudence, are indictable at common law, and punishable according to the heinousness of the offence. In cases where common prudence might have guarded a man, he is left to his civil remedy (the suing for damages). The deceiving by false weights or measures or false tokens, comes within the class of criminal offences.

Frauenlob, Henry; a name of honor bestowed upon a minstrel (*meistersinger*), who lived at the close of the 13th and the beginning of the 14th century, of whose life, however, we know nothing, except that he practised his art at Mentz, 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 virtues 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 bathed 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.

Fraunhofer, 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 11th 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 18 ducats, and promised to take care of him if he wanted any thing. Fraunhofer had still to serve three years, and he spent his money on optic-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. Utzschneider, 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 manufactory at Benedictbeurn, established by Utzschneider. In 1809, Reichenbach, Utzschneider and Fraunhofer united, and founded the establishment for dioptrical instruments, at Benedictbeurn. One of the most difficult operations of practical optics was to polish the spherical surfaces of large object-glasses accurately. Fraunhofer invented a machine which obviated this difficulty, 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 injured by flaws and irregularities of various sorts. 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 2 cwt. of glass, had the same refractive power as glass taken from the surface. He did not again succeed so well for some time; yet he continued to study the causes of his failure, always melting at once 4 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 colors which they contain, was chiefly the circumstance that the colors of the spectrum have no precise limits, and that the transition from one color 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 color 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 solar spectrum, consisting of perfectly homogeneous colors. 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. lv. of Gilbert's *Annalen der Physik.* 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 inflection 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 inflected rays: for instance, he was enabled to produce perfectly homogeneous spectra of colors 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 spectrum produced by a prism; and as, therefore, 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. viii. of the *Memoirs of the Bavarian Academy*, and Part II of Schumacher's *Astronomical Treatises*, in French.) The laws of light, as then known, were such that several hypotheses could be adapted to them. Fraunhofer, in endeavoring 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 consisting of perfectly parallel threads, so fine that about 8000 would make only one Parisian 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, which perfectly justify the theory, were published by Fraunhofer, in vol. lxxiv. of Gilbert's *Annals of Physics.* Until his death, he was occupied with the further investigation of this interesting subject. Several atmospheric phenomena, which formerly could not be explained according to the laws of light then known, (for instance, halos, parhelia, &c.), were explained on optical principles, by Fraunhofer. A treatise on this subject is contained in Schumacher's Astronomical Treatises. We must remark, further, that he made, with his own hands, the instruments which he invented 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 12 Parisian inches diameter, and of 18 feet focus, which he carried to greater perfection. In 1819, the optic institution, which had become so famous under his direction, was transferred from Benedictbeurn to Munich, where it occupies, at present, about 50 persons. The firm, until 1814, was Utzschneider, Reichenbach and Fraunhofer; since that year, Utzschneider and Fraunhofer. Fraunhofer was member of many foreign academies. This distinguished man died June 7, 1826, probably in consequence of his unremitted labors 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 Utzschneider; also the articles *Refractor*, and *Utzschneider.*)

Frayssinous, Denis de; bishop of Hermopolis, chaplain to the king of France, and, until 1827, grand-master of the university of Paris. When the concordate (1802) restored to the priests of the church of Rome the power of performing their functions publicly, many of them issued from the obscurity in which they had till then remained, and, with great zeal, if not with much ability, attacked the philosophy which they considered the source of all the misfortunes of France. Among these, M. de Frayssinous distinguished himself. His discourses excited a great sensation, and the church of St. Sulpice, in which he preached, was crowded with auditors. On the organization of the university (1807), he was created a member of the faculty of theology; but a more brilliant career was opened to him by the restoration of the Bourbons. He was made, successively, court chaplain, titular bishop of Hermopolis, grand-master of the university, and finally, in 1822, member of the French academy, which not a little astonished those who suppose this honor reserved for distinguished scholars; for the name of Frayssinous is nowhere to be found in the annals of literature. He is not a member of the congregation, neither does he belong to the society of Jesuits, to whose interests he is said to be very much devoted. In 1824, he was created minister of public worship. He resigned this office during the session of the chambers in 1828, shortly after the dissolution of the Villèle ministry.

Freckles; small spots of a yellowish color, scattered over the face, neck and hands. Freckles are either natural, or proceed accidentally 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 color than natural, and thereby produce what is called *tan*, *sunburn*, &c., which seem to differ 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 warm covering which the body has had 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 *rete malpighii*, and the carbon which it contains is half acidified, and this substance, in this state, always has a dark color. In the same manner arises the dark tint which the skin in general as-

sumes in summer, and which fire communicates to artisans who labor constantly in its immediate vicinity. The only bad effect of freckles is, that they induce ladies to keep themselves shut up from the influences of the weather, or to apply injurious washes to 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, Fredegonde removed the first wife of the king 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 lost, when Fredegonde, 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, afterwards sent Brunehaut back to Metz, where her son Childebert 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 (in 597), 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 deserted by her vassals, taken prisoner by Clothaire, who, in 1613, 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*, compounded of *Friede* (*peace*), and *reich* (*rich*), and means *peaceful*.

FREDERIC I, Barbarossa, son of Frederic, duke of Suabia, 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 extension and confirmation of his power 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, was again captured (1162), and razed to the ground, with the exception of some churches and convents, some suburbs, and one gate, built in honor of the emperor Otho. Brescia and Piacenza were compelled to destroy their fortifications; the other cities, which had engaged in the revolt, lost their privileges and their freedom. 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 (1777), between the emperor, the pope Alexander III, and the cities of Lombardy. The events of the war, which lasted almost 20 years, were not particularly favorable for the emperor. In the mean time, Frederic had declared Lubeck and Ratisbon imperial cities, and thus founded a middle rank between the emperor and the German princes, by which 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 (1180), which Henry the Lion had held together; but the two parties of the Guelfs and Ghibelines (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 several 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 bathing, as some writers say, in the Cydnus; others say, in the Salef. Frederic was brave, liberal, and equally firm in good fortune and in reverses; and these qualities atone, 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 endeavored 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 Wetteravia. 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 its 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 Suabia, 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 home.

Frederic II, Hohenstaufen, grandson of the preceding, born at Jesi, in the marquisate of Ancona, Dec. 26, 1194, son of the emperor Henry VI and of the Norman princess Constance, heiress 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 distinguished by their personal character, and by 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 incredible; when, by 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 a higher character and a 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 themselves against external dangers 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 *Feme* (q. v.) began its first scarcely-perceptible workings; when the first universities aroused the spirit of inquiry and examination; when the songs of the Provençals 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, bold and generous, and possessed great talents, highly cultivated. He understood 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 vigor, 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 hostile elements of six nations; who, for 40 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 favorite child. Frederic remained under the guardianship of Innocent III till 1209, when he took upon himself the government of Lower Italy and Sicily. The country was divided by the factions of the great barons, favored by the head of the church, at the time when Frederic, at 15 years of age, without counsel or direction, took the reins of government. After promising to conduct a crusade, he was crowned as German king, at Aix-la-Chapelle, in 1215. The possession of the German and Sicilian crowns gave Frederic the hope that he should be able to make himself master of all Italy, subdue Lombardy, and reduce the spiritual monarch in Rome to the dignity of the first bishop in Christendom. But he mistook the spirit of his times, which was very far behind his enlightened views. He slowly prepared the execution of this great plan, with a prudence proportioned to its importance. He caused his eldest son, Henry, to be chosen king of Rome, in 1220, and appeased the new pope, Honorius III (chosen in 1216), who was offended at this measure, by the pretence that the crusade, which he was about to undertake, rendered it necessary, and by the assurance that he would never attempt to unite Sicily with the empire. He then went to Rome, without paying any regard to the refusal of the Milanese to allow him to assume the iron crown, received the imperial crown in 1220, and returned as emperor to his hereditary dominions, which he had left in a state little better than that of a fugitive. Here he began to make preparations for the crusade. Although Frederic was obliged to treat the heretics in the empire with severity, and even declared their children, to the second generation, incapable of office or honor, unless they denounced their parents, yet he introduced the Saracens from Sicily into his Italian territories, allowed them the free exercise of their religion, and thus made them his most useful and faithful subjects. His new code of laws was designed to unite the interests of church and state, and to reconcile the nobility and clergy, the cities and the peasants. It was also necessary to adapt it to the character of people so different from each other as the Romans, Greeks, Germans, Arabians, Normans, Jews and French, while, at the same time, it should respect, as much as possible, the existing institutions. Frederic founded a university in Naples, the paradise of the ancient world, in 1224, which leaves many later institutions of a similar kind far behind it. The famous medical school at Salerno was put in a flourishing condition. Elegant literature shone forth in the court of Frederic, and Frederic himself may be counted among the authors of the more refined Tuscan poetry. The fine arts, under his patronage, had their Nicola, Masuccio and Tommaso da Stephani, and the collections of art at Capua and Naples, the treasures of which were increased by excavations at Augusta in Sicily, were founded. In 1227, Frederic undertook a crusade, which was frustrated by a contagious disease and the sickness of the emperor, so that the fleet returned without reaching its destination. This excited the anger of the pope, Gregory IX, who excommunicated the emperor, and put his dominions under an interdict. In 1228, Frederic set out on a new crusade. But Gregory commanded the patriarch of Jerusalem and the three orders of knights to oppose all the emperor's designs, and caused the dominions of Frederic to be devastated by his own troops, under John of Brienne. Frederic, nevertheless, accomplished what no one since the noble Godfrey (1099) had been able to obtain. By a treaty with Camel, sultan of Egypt, he obtained a truce of ten years, the cession of Jerusalem, of the holy places, of the whole country between Joppa, Bethlehem, Nazareth and Acre, and of the important ports of Tyre and Sidon. All Christendom rejoiced, but the envy of the patriarch and the knights was kindled. Jerusalem, in which Frederic placed the crown upon his head with his own hands, March 18th, 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. The emperor now returned, without de-

lay, 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 would listen to no proposals of peace, but shut up the road 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 threw himself at his feet, imploring mercy. But the deluded prince made a second attempt on his father, it is said, by poison. He was condemned, 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 Ghibeline 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 Babenbergs (1237). Soon after the renewal of the war against the Guelph cities of Upper Italy, a victory at Corte Nuova, on the Oglio, broke the power of the Lombards. Milan, Bologna, Piacenza, Brescia and all the other cities, surrendered. But Gregory was still more incensed, particularly when the emperor made his natural son, Enzio, king of Sardinia, and prepared for the completion of the conquest of Lombardy. On Palm-Sunday, 1239, he excommunicated 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 none but his most decided enemies were summoned to it, and forbade the prelates from going to Rome; but, finding his warnings of no avail, he ordered his son, Enzio, to attack and to destroy the Genoese fleet, and to carry more than 100 prelates, who had embarked 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 Wahlstadt in 1241. After the short reign of Celestine IV, and the long interregnum which succeeded, Frederic at length obtained a new election; but Sigibald Fiesco, who, while cardinal, had been his friend, became the most formidable of his enemies as Innocent IV. He confirmed the excommunication pronounced by Gregory, and fled suddenly from Italy, where the vicinity of the emperor appeared to him too dangerous, to Lyons (1244). Frederic 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 Suessa, 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. Frederic, 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 died 1247. The remain-

der 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 20 years, succeeded his father as elector of Brandenburg. He must be considered as the founder of the Prussian greatness, and, 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 30 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 received, by way of indemnity, Magdeburg, Halberstadt and Cammin. He directed his attention towards the army, and improved it much. In the war between Poland and Sweden (in 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 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, in consequence, erected a fortress near Königsberg. 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 jealousy 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 Bournonville, the Austrian general, avoided a battle, which was ardently desired by the elector, and Turenne defeated the imperial army at Mühlhausen. In the following December, 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 Nimeguen, 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 was at last obliged to submit, by the peace of St. Germain, June 29, 1679. He received from France 300,000 crowns. Louis XIV having occupied several circles of Alsace by his famous *chambres de réunion*, Frederic William effected an armistice of 20 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, Brieg and Wolau, whose prince had died without heirs, in 1675, and which, according to an old treaty, ought to have fallen to Brandenburg. He received 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 Schöning, 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 Potsdam, April 29, 1688, 69 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 Jacobi, in 1700, and is still one of the greatest ornaments of that city.

FREDERIC AUGUSTUS II; elector of Saxony and king of Poland. (See *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 endeavored to increase the army and reform the finances, and became the founder of the exact discipline and regularity, which have since characterized the Prussian soldiers. 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 despotic 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 recognised 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 XII 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 *Charles XII.*) He afterwards interfered in favor of the Protestants of some neighboring 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 aversion. He banished Wolf 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 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 treasury, and an army of 66,000 men. His affairs were in the greatest order and regularity, and to his labors and wisdom was Prussia much indebted for that prosperity and success, which distinguished her till she was humbled by the power of Napoleon.

FREDERIC AUGUSTUS III; elector of Saxony and king of Poland. (See *Augustus.*)

FREDERIC II; king of Prussia, the greatest monarch of the 18th century, born January 21, 1712, son of Frederic William I. His mother was 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 instructress, the highly gifted madame de Rocoules, 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 coolness between him and his father, which increased the king's desire to settle the succession on his younger son, Augustus William. The minister von Grumbkow and Leopold, prince of Anhalt-Dessau, to promote certain plans of their own, and the Austrian ambassador, von Seckendorf, for different reasons, widened the breach. Indignant at the oppression 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 Katt and Keith, were the only persons intrusted with the secret of his flight. He intended to start from Wesel, whither he had accompanied his father. Some incautious expressions of Katt betrayed the inten-

tions of the prince. He was overtaken, brought to trial at Custrin, and obliged to be an eye witness of the execution of his friend Katt. Keith made his escape from Wesel, and lived in Holland, England and Portugal, till Frederic's accession to the throne, when he returned to Berlin, in 1741, and was made lieutenant-colonel, equerry and curator of the academy of sciences. Whilst the prince remained in the closest confinement in Custrin, and was undergoing examination, the king sent a proposal to him to renounce the succession, on condition that he should have the liberty of pursuing his own inclinations in regard to his studies, travelling, &c. "I accept the proposal," said the prince, "if my father declares that I am not really his son." Upon this answer, the king, who looked on conjugal fidelity with religious respect, relinquished his plan. That the king was inclined to sentence his son to death is certain. But the provosts Reinbeck and Seckendorf, who had before intrigued against the prince, now saved his life; the latter, in particular, by availing himself of the interference of the emperor. The prince was not admitted to court till on occasion of the nuptials of the princess Frederica with Frederic, crown-prince of Bayreuth, and was obliged by his father, in 1733, to marry the princess Elisabeth Christina (q. v.), daughter of Ferdinand Albert, duke of Brunswick-Bevern. Frederic William gave the castle of Schönhausen to her, and, to the prince, the county of Ruppin, and, in 1734, the town of Rheinsberg, where he lived devoted to study till he ascended the throne. Among his daily visitors were literati, musicians and painters. He corresponded with foreign scholars, particularly with Voltaire, whom he greatly admired. Several of his writings, in particular his Antimachiavel, had their origin in the rural tranquillity of Rheinsberg. The death of his father raised him to the throne, May 31, 1740. Frederic, on his accession to the throne, found in his states a population of only 2,240,000 men. At his decease, he left 6,000,000. He raised Prussia to this pitch of greatness by his talents as a legislator and general, assisted in the field and in the cabinet, during a reign of 46 years, by many distinguished men. His father, in expectation of a war, on account of the succession of the duchy of Juliers, had an army of 70,000 men on foot. Frederic II, who had already excited great expectations, retained for the most part the institutions and laws of his father, but gave to the latter more extent and vigor. The death of the emperor Charles VI was a favorable moment, of which Frederic II took advantage, to revive the claims of the house of Brandenburg with regard to the Silesian principalities, Jägerndorf, Liegnitz, Brieg and Wolau, so far as to ask from the queen Maria Theresa the duchies of Glogau and Sagan, in return for which he promised her assistance against all her enemies, his vote for the election of her husband as emperor, and 2,000,000 Prussian dollars. But these proposals being rejected, he occupied Lower Silesia, in December, 1740, and defeated the Austrians under Neipperg, April 10, 1741, near Molwitz. This victory, which was almost decisive of the fate of Silesia, raised new enemies against Austria. France and Bavaria united with Prussia, and the war of the Austrian succession commenced. The only ally of the queen of Hungary and Bohemia, George II of England, advised her to make peace with Prussia, because Frederic II was her most active and formidable enemy. After the victory of Czaslau (Chotusitz), gained by Frederic, May 17, 1742, the first Silesian war was terminated by the preliminaries signed at Breslau, under British mediation (June 11), and by the peace signed at Berlin, July 28, 1742. Frederic obtained Lower and Upper Silesia, and the county of Glatz, with the exception of Troppau, Jägerndorf and Teschen, 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 1743, 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 states of Bavaria, and the Austrians were every where victorious. Frederic therefore, apprehensive 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, on condition that he should receive the circle of Konigingratz. 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 Pfaffenhofen, obliged Maximilian Joseph, the young elector of Bavaria, to conclude the peace of Fuessen 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 8, 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 Ressedorf, 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 Saxon dollars to Prussia. During the 11 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 muses. It was at this time that he wrote his *Mémoires de Brandenbourg*, 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 organization of his army, which was increased to 160,000 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, 1756), with which the seven years' war (q. v.), or third Silesian war, commenced. The peace of Hubertsburg, February 15, 1763, 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 the seven years' war with a reputation 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 peasants he 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 8,000,000 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, 1764), in consequence of which Frederic supported the election of the new king of Poland, Stanislaus 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 Graudenz, and established a council of war and of the domains at Marienwerder. The plans of the emperor Joseph II, who visited him in Silesia, in 1769, 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 next 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 not to be diverted from her designs by negotiations. Saxony therefore formed an alliance with Prussia, and Frederic invaded Bohemia with two ar-

mies (July, 1778). The emperor Joseph kept his position, in a strongly fortified camp, behind the Elbe, near Iaromirz, 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 13, 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 concluded, in connexion with Saxony and Hanover, the confederation of the German princes, July 23, 1785. An incurable dropsy hastened the death of this great king. He died at Sans-Souci, August 17, 1786, in the 75th year of his life and the 47th 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, an army of 200,000 men, great credit with all the European powers, and a state distinguished for population, industry, wealth and science. Improved by severe experience before he ascended the throne, animated by the example of his father, and possessed of rare talents, ripened in the solitude of Rheinsburg, Frederic seized the helm of government, and shook the whole political system of Europe, when he drew his sword in defence of his rights as a member of the empire, and of the rights of his house against the encroachments and the tyranny of the emperors, when he conceived and established, in accordance with the wants of his time, the confederation of princes, the master work of his policy. One of his great merits is, that, in the most difficult circumstances, he contracted no public debts, but, on the contrary, although he distributed a considerable part of his revenues, in different ways, among his subjects, he had a richer treasury than any monarch in Europe ever possessed. His contempt for ecclesiastical establishments, which was considered by his contemporaries as a contempt of religion, has been censured. But his writings show that his heart was often open to the highest sentiments of piety. Entirely unacquainted with the literature and mental cultivation of Germany, he underrated it, and contributed nothing to its improvement. It must, however, be confessed that the German muse was not very attractive at the time when Frederic devoted himself to French literature, and, when a higher spirit was infused into it, the king, crowded with occupations, was too strongly fixed in his tastes and studies to be affected by it. A passage in his writings shows that he anticipated a brighter day for German literature, without the hope of seeing it himself. Frederic's complete works, relating chiefly to history, politics, military science, philosophy and the belles-lettres, and his poetical and miscellaneous works, are to be found in three collections—*Œuvres Posthumes de Frédéric II* (Posthumous Works of Frederic II, Berlin, 1788, 15 vols.); *Supplément aux Œuvres Posthumes de Frédéric le Grand*, Berlin, 5 vols.; and *Œuvres de Frédéric II, publiés du Vivant de l'Auteur* (Works of Frederic II, published during the Life of the Author), Berlin, 1789, 4 vols. The edition of Amsterdam (1789 and 1790) is more critical. His Antimachiavel (first edition, Hague, 1740) shows how he prepared himself for the throne. His essay on the forms of government and on the duties of a ruler, which he wrote after 40 years' reign, is an excellent manual for a sovereign. Dippold, in his Sketches of Universal History, draws an excellent picture of Frederic. The government of Frederic was an autocracy, and its consequences showed themselves most disadvantageously in the civil administration, which continually became more a machine. Sufficient to himself, Frederic had no council. His talents, his army and his treasure were his sole means of government. The consequence was that the separation between the citizens and the military rose to an unexampled height in the Prussian monarchy. But it must be acknowledged that Frederic was popular in the noblest sense of the word—that he was the man of the nation. He lived, indeed, in the midst of his people. Each of his subjects was proud of him, and addressed him without fear, for the king considered himself as only the first officer of the state.

Frederic V, king of Denmark, was born in 1723, and succeeded his father, Christian VI, in 1746. He preserved his dominions in peace, and promoted 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 architecture, sent a mission of learned men 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, 1766. He was twice married, first to Louisa, daughter of George II, and secondly to Juliana Maria, daughter of the duke of Brunswick-Wolfenbuttel.

Frederic William III, king of Prussia, son of Frederic William II and Louisa, princess of Hesse-Darmstadt, was born August 3, 1770. The prince received a good education. In the war of Austria and Prussia against France, in 1792, he served under his father; and, on several occasions, he displayed that intrepidity which characterizes the Prussian princes. In this campaign, he became acquainted with Louisa, princess of Mecklenburg-Strelitz, whom he married December 24, 1793. On the death of Frederic William II (November 16, 1797), Frederic William III ascended the throne. Favorites of both sexes had acquired such an influence during the latter part of his father's reign, and so many abuses had crept into the government, that all eyes were turned to the crown-prince, who, immediately after his accession to the throne, revoked the hateful *Religions-edict*, and abolished the censorship of the press and the monopoly of tobacco. The administration of justice was reformed. He also introduced into Prussia the custom of stating the motives of the royal ordinances. He reformed the prodigality of his father, and encouraged literature and domestic industry. He lived a strictly domestic life, his whole character being more fitted for a private person than for a sovereign. By the peace of Lunéville, February 9, 1801, he was obliged to cede the Prussian provinces on the left bank of the Rhine to France, for which he was afterwards indemnified by secularized bishoprics, &c., in Germany. Prussia gained by this exchange 4800 square miles, with 400,000 inhabitants. In 1805, England, Russia and Austria having formed a coalition against France, Prussia at first maintained her neutrality; but the march of a French-Bavarian army through the neutral territory of Anspach, and a personal visit from the emperor Alexander in Berlin, induced the king to join the coalition secretly, November 3, 1805, under certain conditions. After the battle of Austerlitz, peace was concluded between Austria and France. A few days before (December 15), count Haugwitz had concluded, at Vienna, a preliminary agreement between France and Prussia, by which the alliance between the two powers was renewed. Prussia ceded Anspach in favor of Bavaria, and Cleves and Neufchatel to the free disposition of France, in return for which, France ceded all Hanover to Prussia. This unjust acquisition of Hanover, by Prussia, who actually took possession of it April 1, 1806, occasioned first a manifesto (April 20), and afterwards (June 11), a declaration of war against Prussia by Great Britain. Prussia then projected the plan of a confederation in the north of Germany, as Napoleon had done in the south, which was to comprise all the states not included in the confederation of the Rhine. To support her demands, that France should not interfere with this confederation, should withdraw her troops from Germany, and give up some places in which French troops were still quartered, Prussia, in connexion with Saxony, declared war against France. The peace of Tilsit, July 9, 1807, was the result of this injudicious measure. Prussia was reduced to insignificance, and French troops remained at Berlin until 1808. Frederic William returned to Berlin, 1809, and Prussia underwent a total reorganization, highly advantageous to the country. For the great reforms which took place, the nation was indebted to able statesmen, who found their way to the throne. Frederic William himself, without possessing the talents of a ruler, has the welfare of his subjects at heart. October 9, 1807, was issued the edict abolishing all feudal services, &c., which was modified July 28, 1808; and, November 19, 1808, a new organization was given to the municipal administration. November 6, 1809, the king declared the royal domains alienable, and, October 30, 1810, declared the landed property of monasteries, and other ecclesiastical establishments, to be the property of the state—a measure which was very offensive to his Catholic subjects, particularly in Silesia. In 1809, the university of Berlin was established. July 19, 1810, the queen died; the children of this marriage are four princes and three princesses, still living. February 24, 1812, Frederic William concluded at Paris an alliance, defensive and offensive, with the emperor of France. In June, 1812,

war having broken out between Russia and France, Prussia furnished 30,000 men, which were attached to the 10th *corps d'armée*, under marshal Macdonald, and were destined to conduct the siege of Riga. December 30, 1812, general York, at the head of this body, went over to the Russians. The king, at first, publicly disapproved this step; but, March 11, 1813, he declared his approbation of it, in the order of the day. On the 3d and 9th of February and 17th of March, the king, induced by Scharnhorst and other men of spirit, called his people to arms; and so great had been the sufferings of the nation from the long continued wars, and such was its hatred of the French, who were considered as the cause of all those sufferings, that the king, who suffered with the nation, became enthusiastically beloved, and all ranks were eager to sacrifice property and life, to aid in delivering the country from the French. February 28, the king concluded an alliance with Alexander. During the campaign, Frederic William repeatedly gave proofs of his courage. After the conclusion of the peace of Paris, he went with Alexander to England, and was present at the congress of Vienna. He again sent troops against Napoleon, when the latter returned from Elba, and once more visited Paris. In 1818, he was present at Aix-la-Chapelle, and, in 1823, at the congress of Verona, and travelled through Italy. Having promised his people a constitution, adapted to the claims of the age, he has——reëstablished the provincial estates, which have the right of expressing their opinions on subjects laid before them. This is their sole privilege. In 1818, he, or rather Hardenberg (q. v.), his minister, founded the university of Bonn, and, in 1820, the museum of antiquities at Berlin. In general, great progress has been made during his reign, in every branch of education. Unfortunately, the king has thought himself called upon to give his nation a liturgy, which has been arbitrarily introduced, and has occasioned much dissatisfaction. November 11, 1824, the king concluded a left-handed marriage with the countess of Harrach (born August 30, 1800), on whom he conferred the title of countess of Hohenzollern, princess of Liegnitz. She was a Catholic, but, in 1826, she joined the Protestant church. (See *Prussia*.) His eldest son, Frederic William, born October 15, 1795, married Elizabeth, sister of the king of Bavaria. His daughter Charlotte, born July 13, 1798, is the present empress of Russia. Another daughter, the princess Louisa, is married to prince Frederic, second son of the king of the Netherlands. King Frederic William III is an honest man, and a lover of justice; but neither his mind nor his heart is sufficiently large to enable him to understand the age in which he is placed. He is economical, and his court is the least ostentatious of all the great courts in Europe. The present queen of the Netherlands, and the electress of Hesse-Cassel, are his sisters.

Frederic VI, king of Denmark, son of Christian VII (q. v.) and of queen Caroline Matilda, princess of England, born January 28, 1768, married, July 31, 1790, Sophia (Frederica), daughter of the landgrave of Hesse-Cassel (born October 28, 1767), by whom he has had two daughters. April 14, 1784, he was declared of age, and regent during the sickness of his father, who was suffering under a mental derangement. He succeeded to the throne March 13, 1808. The counts Bernstorff, father and son, were, successively, his ministers. The reign of Frederic VI is memorable for the abolition of feudal servitude. He also prohibited the slave-trade earlier than any other government (March 16, 1792), and abolished it entirely in 1803; established courts of arbitration for the avoiding of lawsuits, and founded schools of mutual instruction. From 1794 to 1799, Denmark and Sweden, continued, in alliance, to maintain their neutrality by the force of their united navy, which induced England to adopt a juster policy. The Danish trade was relieved from its burdens in the Mediterranean by the successes of Danish arms (1797). Until 1800, the king succeeded in maintaining his neutrality; but, when Denmark joined the northern neutrality of Paul I (see *Denmark*), she became involved in the troubles of Europe. She lost her trade, her navy, and Norway (see *Kiel, Peace of*). Frederic VI was present at the congress of Vienna. In 1815, he sent a contingent of 5000 men, which formed part of the army of occupation in France. After his return from Vienna, he was crowned, with his wife, July 31, 1815, at Friedrichsborg. He joined the holy alliance. His daughter, the crown-princess Caroline, born October 28, 1793, is not married.

Frederick; a post-town of Maryland, and capital of Frederick county, on Carrol's creek, a branch of the Monocasy; 43 miles N. N. W. Washington, 45 W. Baltimore; population in 1820, 3637. (For

the population in 1830, see *United States.*) It is pleasantly situated, regularly laid out, and well built, and contains a court-house, a jail, a bank, a market-house, an academy, and seven houses of public worship, one for German Lutherans, one for German Calvinists, one for Episcopalians, one for Presbyterians, one for Roman Catholics, one for Baptists, and one for Methodists. Several of the public buildings, and many of the private houses, are spacious and elegant. A considerable proportion of the houses are built of brick; many are framed, and some are constructed of logs. It has an extensive trade with the surrounding country, and transports great quantities of wheat and flour to Baltimore, also leather, shoes, saddles, hats and gloves. Several newspapers are published here.

Fredericksburg; a post-town of Virginia, capital of Spotsylvania county, on the south-west side of the Rappahannoc, 110 miles from its mouth, 57 miles south-west of Washington, 66 north of Richmond; population in 1817, 3255. (For the population in 1830, see *United States.*) It is pleasantly situated, regularly laid out, and is one of the most healthy, flourishing and commercial towns in the state. It contains a court-house, a jail, a spacious town-house, a market-house, a masonic hall, a Lancasterian school, two banks, and four houses of public worship, one for Episcopalians, one for Presbyterians, one for Baptists, and one for Methodists. It is the seat of the superior court of law and of chancery for the district. It is advantageously situated near the head of navigation, and exports large quantities of corn and flour, and considerable quantities of tobacco, flaxseed, peas and beans. The annual amount of exports is about $4,000,000. On the waters of the Rappahannoc, within two miles of the town, there are eight flour mills. The river is navigable as far as this place for vessels of 130 or 140 tons, having 9½ feet of water. The shipping of this town is entered at the port of Tappahannoc, 70 miles below Fredericksburg. Much of the surrounding country is fertile, well cultivated, and contains many fine plantations.

Frederickston (formerly *St. Ann*); a town of North America, and seat of the government of the province of New Brunswick, on the right bank of St. John's river, 80 miles from its mouth; lon. 66° 45′ W.; lat. 46° 3′ N.; population, 500. It is regularly laid out, and contains a province hall for the general assembly, a market-house, a Baptist and a Methodist meeting-house. Vessels of 50 tons pass four miles above the town.

Fredericks Oord. (See *Colonies, Pauper*, after the article *Colony.*)

Free Cities. The cities of Germany originated chiefly during the reign of the Carlovingians and the emperors of the Saxon house, and remained, for a long time, dependent on the secular or spiritual nobility, 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 the offer, which his embarrassed situation 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 12th century. Gemeiner, however, has proved, by means of documents—in his work, *Ueber den Ursprung der Stadt Regensburg und aller alten Freistädte, namentlich der Städte Basel, Strasburg, Speier, Worms, Mainz und Köln* (On the Origin of the City of Ratisbon, and all the ancient Free Cities; in particular, those of Basle, Strasburg, Spire, Worms, Mentz and Cologne), Munich, 1817—that there 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 16th 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 enjoy an independent government; should never swear allegiance to any emperor or king; nor be obliged either to engage in any expedition against the Romans, or to pay for 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 difficulty. The

example of the cities of Lombardy also encouraged those of Germany. In the middle of the 13th century, two important confederacies were established for common objects—the Hanseatic league (q. v.) (1241), and the league of the Rhenish cities (1246). 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 these cities coöperated vigorously in the recovery of 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 12th article of the constitution of the German confederacy, they established a common supreme court of appeal, in 1820. By the general act of the congress 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 Hamburg have restored their constitutions, as they were before the year 1810. Besides these four free cities in Germany, Cracow (q. v.) 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 guarantied to it by these three powers, and the limits of its territory have been accurately defined.

Free Corps; a term used on the European continent for a corps which is organized to act merely till the end of the war, and consists of volunteers. It performs the service of light troops, and, as its losses are not heavily felt, is employed in all dangerous services, in harassing the enemy, &c.: on this account, more liberties are allowed to free corps than to regular troops. They are composed of persons of dubious characters, and there is always inconvenience, at the close of the war, in disbanding a numerous body of bold and active individuals, generally unfit for peaceful society. Napoleon employed none. Frederic the Great had some in his service, but, sensible of the danger of disbanding such desperadoes, at the close of the seven years' war, he converted them into regular troops, contrary to his promise.

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, 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 honor. He always remained in a certain moral dependency (*vinculum pietatis*) on his former master. They owed each other reciprocal aid and support. At a later period, the number of emancipated slaves increased to such an alarming extent, that they even became formidable to some weak emperors by the power and wealth they had acquired; and many laws were passed for the purpose of diminishing their number. Thus, for instance, it was ordered, that out of 20,000 slaves, not more than 160 should be set free by testament. Besides emancipation by testament, two other modes were in use. The one consisted in the master causing his slave to be enrolled in the list of citizens by the censor. The other was the more solemn. The master, leading his slave by the hand before the pretor 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 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 pretor, and the slave received a cap or hat, the badge of freedom, in the temple of Feronia.—The manumitted slaves in the U. States of North America and in European colonies have this disadvantage in comparison with the freedmen among the ancients, that their color continually recalls their former condition, and connects them with the remainder of the same race in servitude, while it produces a marked distinction between them and their former masters. This has prevented them from being admitted to the full rights of citizenship in the U. States. (See *Sketch of the Laws relating to Slavery in the United States*, by George M. Stroud, Philadelphia, 1827.) In Colombia, the emancipa-

tion 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 persons of color.

FREEDOM OF CORPORATION, in England; 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. *Freehold in deed* 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.*)

FREESTONE. (See *Sandstone.*)

FREE-THINKER; a person who rejects revelation; a deist. The term originated in the 18th 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, or Essays of Wit and Humor, &c. Math. Tindal (who died 1733), Morgan, Bernard Mandeville extended free-thinking to morals. Lord Bolingbroke and Hume are the most distinguished English free-thinkers. Free-thinking also originated in France, from the abuses of the church, but assailed all revealed religion. Voltaire and the encyclopædists 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 woollen stuff or cloth; so called as being freezed or napped 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 goes on; at the same time, the bulk of 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 favor 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 135°. 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 subtile, that, insinuating themselves into the substance of the fluid, they augmented its bulk, at the same time 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 unelastic 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 mercury 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 strew 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; there being 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 to their bottoms, and the pans, constantly oozing out water to their external surface, are cooled by the evaporation of it. In Spain, a kind of earthen jars, called *buxaros*, 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 has lately 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, recover its power by drying in the sun. This curious and beautiful discovery of artificial congelation, will, therefore, produce ice in the tropical climes, 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 absorbent 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 those two points respectively. (See *Thermometer.*)

Freight is the consideration money agreed to be paid for the use or hire of a ship; or, in a larger sense, it is the burthen 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.*)

Freinsheimius, John, born at Ulm, 1608, displayed brilliant talents at an early age, and entered the university in his 15th 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 favorably known by its vigorous eloquence and fine style; and he was invited to Sweden, in 1642, as professor of political economy and of eloquence at Upsal. His reputation induced queen Christine to appoint him librarian and historiographer in Stockholm, in 1647. But, although his position was agreeable, and he was in great favor with the queen, the climate was so unfavorable 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, 1660. He showed himself a profound scholar, particularly in ancient literature and history, by 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 Weimar, entitled The Descent and Deeds of the modern Hercules, remains in deserved oblivion.

Freire, Ramon, formerly director of Chile, gained distinction by his services on the southern frontier of Chile, against the Araucanians and Benavides. In January, 1823, he was called upon, by the large portion of the people dissatisfied with the government of O'Higgins, to displace the latter, which he did with the aid of the troops under his command, and was then appointed supreme director in his stead. He resigned the office in 1826, and don Manuel Blanco held it a few months. On the new organization of the government in 1827, Freire was chosen president, but refused to accept the office and be regularly qualified, in consequence of which the duties devolved

upon the vice-president, general Pinto. (See *Chile.*)

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 whitish, 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 colors, 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 the most suitable, and, if they are sown early, a warm situation should be selected. Low and wet grounds are altogether unfit for them. Throughout all Europe, and in the U. States, they are an important object of cultivation, and are eaten prepared in various manners.

French History, Literature, &c. (See *France.*)

Fréret, 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 16th year, he had read and made extracts from the principal works of Scaliger, Usher, Petavius, and other distinguished chronologers. He made Rollin his model. The academy of inscriptions elected him a member at the age of 25. On account of his discourse on his admission into the academy, *Sur l'Origine des Français*, which was as learned as it was bold, and contained some opinions offensive to the government, 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 his confinement, and that he read him so often, that he knew him almost 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 *Cyropædia* of Xenophon. The frequent perusal of Bayle in prison has been treated as the origin of the atheistical opinions manifested in the *Lettres de Trasybule à Leucippe*, and the *Examen des Apologistes du Christianisme*; but the *Biographie* maintains, that these works were not his, but were falsely ascribed to him after his death. After he was set at liberty, the marshal de Noailles 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 treatises 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 of inscriptions. He 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 (*Œuvres complètes de Fréret*), with annotations and explanations, by Champollion-Figeac, has appeared in Paris, commencing in 1825, in 20 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 Comtesse de* ———. The countess 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 favorite, protected the work, which he read with pleasure, and prevented the arrest of Fréron. After having published 13 volumes of this journal, he continued it regularly 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, *Stanislaus Fréron*, commenced, 1789, the *Orateur du Peuple*, and was, notwithstanding his mild temper, for a long time, the most zealous adherent of Robespierre.

Fresco Painting; that kind of painting which is executed with water-colors, upon a layer of fresh plaster, from which circumstance it derives its name. As great rapidity of execution is necessary to paint before the plaster becomes dry, cartoons (q. v.) are used for tracing the outlines of the figures, &c., and a small picture serves as a guide for the colors, if the cartoon does not indicate them. A great knowledge of colors and great skill in drawing are necessary for fresco painting, because there is no opportunity for correcting: whatever the painter does is finished. The colors are mixed beforehand, and put on just as they are wanted; only in the dark parts a little retouching takes place. Fresco painting is one of the most durable kinds. It is pretended, that there are specimens of it extant of the time of Constantine the Great. It began to revive in the 16th 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 colors; he is, therefore, reduced to depend solely on form, character, 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 *stanze* 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 Massimi*, 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, du. (See *Dufresne*.)

Fresnoy, Charles Alphonso du; a native of Paris, eminent in the sister arts of painting and poetry; born 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 favorite art. In 1634, he accompanied his friend Mignard to Italy, and was, at this period of his life, mainly indebted to his liberality for support. 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 54.

Frets; certain short pieces of wire fixed on the finger-board 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, and 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 (*joy*); a German word, which forms a part of many geographical names, as *Freudenthal*, Valley of Joy.

Freya. (See *Northern Mythology*.)

Freyberg, a celebrated mining town of Saxony, circle of the Erzgebirge (q. v.), on the Münzbach, owes its origin to the discovery of silver mines in the neighboring country, in the 12th century, when miners from the Hartz mountains settled there in 1195. In the beginning of the 16th century, Freyberg had 30,000 inhab-

itants, but the 30 years' war, that scourge of Germany, destroyed the prosperity of the place. It has at present 1100 houses, with 9000 inhabitants (lat. 50° 53′ N.; lon. 13° 18′ E.), and contains some remarkable antiquities. 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 labor in the mines, at their leisure hours, like common miners, for a little higher wages. The chief mining school is preparatory to the academy. There are also manufactories in Freyberg; but its chief support is derived from mining and the manufactures connected with it. About 10,000 laborers are employed in the mines in the neighborhood. The mine called *Himmelfürst*, is celebrated for its productiveness, for the excellent manner in which it is worked, and for the machinery employed in it. It has 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 neighborhood of Freyberg, 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 produced 240 millions of Saxon dollars, or 80,000 cwt. fine silver, in 640 years.

Freyburg; 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 Presburg (1805). Freyburg 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, 1826), and Schreiber described it (Freyburg, 1820). The 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 Tubingen is of some disadvantage to it, yet, in 1825, it had 600 students. Freyburg has likewise a forest academy and a polytechnic school.

Freyre, don Manuel, born about 1765, at Ossuna, in Andalusia, displayed his courage while a young officer in the war of the Pyrenees. In 1798, he was appointed major in a regiment of Spanish hussars, and the war of independence, in which he distinguished himself by his successes against the French, found him a lieutenant-colonel in 1808. In the following year, he commanded his regiment, with the rank of colonel, under Abadia, and displayed his courage and conduct in the battle of Ocana. On the 30th and 31st of August, 1813, he contributed essentially, by his manœuvres, to the capture of San Sebastian. During the revolution of 1820, when the king stood in need of a tried and brave commander, the choice fell upon him. He published a proclamation to his troops, from Seville, January 14; but it was difficult to lead troops against those who, a few days before, had been their comrades. He seemed desirous of gaining by negotiation what he doubted his power of obtaining by force. His measures would have been successful, had not the revolution broken out in Galicia and other places. After having blockaded the island of Leon, from the land side, in the month of February, and pursued general Riego into the mountains of Ronda, deputies appeared before him at Puerto-Santa-Maria, March 7, in the name of several naval and artillery officers in Cadiz, demanding the publication of the constitution. On the 9th, Freyre went to Cadiz, and was compelled by the state of things there, and the approach of general count d'Abisbal, to promise that the constitution should be proclaimed the next day. He considered this change necessary, as he wrote to the king, to avoid a civil war, particularly as count d'Abisbal, who had a great influence over the garrison of Cadiz, was in the vicinity. He entered Cadiz on the following day, to be present at this solemnity, on which

occasion the massacre, the causes of which are still unknown, was committed. Order was no sooner restored, than the officers of the garrison approached, demanding the arrest of the artillery officers, whose political opinions were suspicious. Freyre complied with this demand, as the only means of protecting the obnoxious persons. He also ordered the battalions, which had committed the massacre, to be withdrawn from Cadiz. On the 14th, he received the royal decree of March 7, whereupon the constitution was proclaimed in Cadiz. A few days afterwards, he was deprived of the chief command, and imprisoned on the charge of being the author of the bloodshed at Cadiz. (See *Defensio del General D. Manuel Freyre*, Madrid, 1820.)

Friburg; a canton of Switzerland, surrounded by the cantons of Berne and Vaud, except a narrow part, which touches the lake of Neufchâtel. The northwest 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; 7300 Protestants, the rest Catholics.

Friburg, or Freiburg; called *Friburg in Uchland*, to distinguish it from *Friburg in the Brisgau*; a town in Switzerland, capital of a canton of the same name, 16 miles S. W. of Berne, 27 N. E. of Lausanne; lon. 6° 48′ E.; lat. 46° 50′ N.; population, 6461. It contains 4 churches, 8 convents, 3 hospitals, and a college, with 15 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, such surfaces consisting alternately of small eminences 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 it 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 fifth 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, moving upon each other, is generally supposed to be 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 bodies are drawn contrary to the course of their fibres; but Coulomb showed, that the friction in this case is sometimes the smallest. 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 one half and one quarter of that force. 5. Friction is not generally increased by augmenting the rubbing surfaces. 6. 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. 7. 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 steelyard 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 15½ 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 against the surface of the earth; 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 works of art are equally important. Our garments owe their strength to friction; and the strength of ropes, sails, and various other things, depends on the same cause; for they are made of short fibres, pressed together by twisting; and this pressure causes a sufficient degree of friction to prevent the fibres sliding 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 workmen. Wool also has been converted into a 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 insures 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 friction are well illustrated by the advantages of currying horses. Friction is an efficacious remedy in several conditions of disease; particularly in chronic rheumatisms 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 tumors, &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 *Frigeday*, has its name from the wife of Odin, Frea or Friga. (See *Northern Mythology*.)

Friday, Good; the day of our Savior's crucifixion. The Protestants on the continent of Europe, 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 Bunzlau, 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 over 2000 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 2 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 5 o'clock in the morning, when the first divisions of the Russian army arrived, and crossed to the left bank of the Aller 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 Aller in the rear. The right wing, consisting of four divisions, and the greatest part of the cavalry, rested on the Aller. The left, consisting of two divisions, separated from the right by a mill stream, also rested on the Aller; 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 whole second 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 7 o'clock in the morning; Napoleon himself, at 9 o'clock, with the division of Ney and the horse-guards; the first division, under Victor, with the foot-guards, at three o'clock in the afternoon; in all, 75,000 men. From 5 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 of 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 Posthenen and of the road which passes through it, and thus prevent the developement of the French forces, and, perhaps, destroy them in detail. But Bennigsen, satisfied with these inconsiderable advantages, allowed himself to be detained by a cannonade and some skirmishes of the light infantry, and looked on while the enemy continually augmented his forces. The French, on the coming up of their last divisions, immediately commenced a general attack in front, whilst Ney (at 6 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 he opened a battery of 40 cannons upon the heights 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 Aller. 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, and 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 division 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 concluded on the 21st, which was succeeded by the peace of Tilsit. (q. v.) 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 16 cannons.

Friendly Cove, or Santa Cruz; a harbor 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; lon. 126° 30′ W.; lat. 49° 35′ N.

Friendly Islands; a cluster of islands in the South Pacific ocean, of great extent, and upwards of 150 in number; some of which are large, and some lofty, with volcanoes. The most important are the following: Tonga, Eaoowe, Annamooka, Hapaee islands, Mayorga islands, Feejee islands, Vavaoo, and Toofoa. Lon. 184° 46′ to 185° 45′ E.; lat. 19° 40′ to 21° 30′ S. They are in general fertile and well planted with cocoa-nut and bread-fruit-trees, plantains, sugar-canes, yams, &c. Fowls are large and good; parrots and paroquets are found, of various kinds; pigeons, with plenty of wild ducks, and other water-fowl. The inhabitants appeared to captain Cook, who first discovered these islands in 1773, hospitable and kind, and to be united in a firm alliance; on which account he gave them the name they bear. But the accounts of subsequent visitors, particularly that of Mariner, show them to be capable of the most ferocious 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 acquainted 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, cocoa-nuts, 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 England 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.*)

Fries, James Frederic, professor at the university of Jena, was born at Barby, August 23, 1773. His father was one of the directors of the Moravians, by whom Fries was educated. After studying theology in their seminary, he studied philosophy at Leipsic and Jena, in 1795 and 1796, attending, at the same time, to law and the natural sciences, as auxiliary to his philosophical studies. He was a follower of Kant, particularly in preferring the analytical method of investigation. (We refer our readers to the article *Philosophy*, for a further exposition of his system.) In 1801, he was graduated doctor of philosophy, and was licensed to lecture. In 1804, he published his Philosophical System of Law, and his System of Philosophy as an evident Science. He then travelled through Germany and Italy, again lectured in Jena, and published his work, *Wissen, Glauben und Ahnen.* In 1805, he was appointed professor of philosophy and elementary mathematics in the university of Heidelberg, to which was united, in 1813, the professorship of experimental physics. He there published, in 1807, his New Critique of Reason, 3 vols., and, in 1811, his System of Logic, (2d edition, 1819); Popular Lectures on Astronomy (1813); Sketch of the System of Theoretical Physics, (1813); Fichte's and Schelling's Newest Doctrines of God and the World (1807). In 1816, he published a work on the constitution of Germany, and one against the Jews, &c. He likewise edited the department of philosophy, mathematics and the natural sciences, in the *Heidelberger Jahrbücher*, for some years. In 1816, he returned as professor to Jena, and lectured only on philosophy. Among his works published there, are, Manual of Practical Philosophy; *Allgemeine Ethik und philosophische Tugendlehre; Handbuch der psychischen Anthropologie*, and *Julius und Evagoras*, or The Beauty of the Soul, a philosophical novel. Among the theologians, De Wette has adopted his metaphysics as the basis of his dogmatics. In many of his views, he coincides with Jacobi. He took part in the celebration of the Wartburg festival, and has ever since been an object of suspicion to the great German powers. His own government, that of Saxe-Weimar, suspended him, in consequence, from his professorship, but he retained his salary. In 1824, he was dismissed from the professorship of logic and metaphysics, but received the professorship of physics and mathematics, without being a member of the academical senate and council. The government was probably obliged to take this step, in order to satisfy Prussia and Austria. The private character of Fries is very amiable.

Friesland; a province in the Netherlands, bounded north by the German ocean, east by Groningen and Overyssel, south by Overyssel and the Zuyder Zee, and west by the river Flie. 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:

	Population.
Lewarden, . . .	93,220
Sneek, ...	45,769
Heerenveen, . .	37,568
Total, ...	176,557

Friesland, East; a province of Hanover, bounded north by the sea, east by Oldenburg, south by Oldenburg and Meppen, and west by Groningen; about 38 miles from north to south, and 36 from east to west. The air is moist and thick, but much purified by sea breezes. The spring and harvests are late. The land is flat, low, and defended by strong and lofty dikes 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 at Em-

den, Leer and Norden. The principal towns are Aurich, Norden and Emden. It is divided into 12 districts; square miles, 1113; population, 120,826; houses, 21,673.

FRIEZE, 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 in basso relievo.

FRIGATE, in the navy; a light, nimble ship, built for the purpose of sailing swiftly. These vessels mount from 20 to 44 guns, and sometimes more.

FRIGATE-BIRD. (See *Albatros.*)

FRIMONT, John, baron de, prince of Antrodocco, Austrian general of cavalry, descended from a noble family of Lorraine, emigrated from France in 1791, and served under Condé. When the corps of *émigrés* was disbanded, he entered the Austrian service, and rose to the rank of lieutenant field-marshal. In 1812, he succeeded Schwartzenberg in the command of the Austrian auxiliary corps of the French army. In 1815, he received the command of the Austrian troops in Upper Italy, and directed the operations against Murat with great skill, while he commanded in person against the French in Savoy. July 9, Grenoble surrendered to his troops. July 11, he entered Lyons. In 1821, Frimont received the command of the Austrian troops destined to carry into effect the decrees of the congress of Laybach. (q. v.) February 6 and 7, he crossed the Po, and, on the 24th, he entered Naples. General Walmoden occupied Sicily. The Neapolitan minister of police, prince Canosa, used his power with so much rigor, that Frimont made representations to the king, whom the Austrian cabinet advised to choose more moderate ministers. Frimont, indeed, effected a great deal of good in Naples, and not unfrequently stayed the fury of the royalists. He maintained a strict discipline, and improved many municipal regulations. November 30, 1821, Ferdinand, king of Naples, created him prince of Antrodocco, with a grant of 220,000 ducats, and conferred on him the order of St. Januarius; the emperor also invested him with that of the iron crown. In 1825, he succeeded Bubna in the military command of Lombardy.

FRINGE-TREE (*chionanthus Virginica*) is a small tree, belonging to the same natural family with the olive, inhabiting the U. States from latitude 39° to the gulf of Mexico. It sometimes attains the height of 20 feet, but usually does not exceed 8 or 10; the leaves are opposite, oval, and six or seven inches long; the flowers are very numerous, snow-white, disposed in panicled 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.

FRISIANS (*Frisii*); an old German tribe of the Istævones and Ingævones, 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 4th and 5th centuries, they appear in the great confederation of the Saxon tribes, and inhabited the sea coast from the Scheldt 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 Edzard at length united East Friesland, 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 infeoffment 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 Wiarda's *History of East Friesland*, 10 vols., coming down to 1816, Aurich, 1792—1816.)

FRITILLARIA (*fritillary*) is a genus of plants belonging to the natural order *liliaceæ*. The species are herbaceous; the leaves simple, alternate, though sometimes appearing opposite or verticillate; the flowers, terminal and pendent; the corolla campanulate, of six petals; the stamens six; the style trifid, 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 favorite, and supposed to be a native of Persia, differs from the other species in having its large orange or yellow flowers cernuous beneath a terminal tuft of leaves.

Froben, John (Frobenius); a learned printer, born at Hammelburg, in Franconia, in 1460. After having completed his studies, he went to Basle, and became the corrector of Amerbach'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 them, decorated with designs from Holbein. 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, the discovery of a north-west passage to the Indies excited his ambition, and, after many fruitless attempts to induce merchants to favor his project, he was enabled, by the ministers and courtiers of queen Elizabeth, to fit out a private adventure, consisting only of two barks of 25 tons burden each, and a pinnace of 10 tons. In this enterprise, he entered the strait which has ever since been called by his name, and returned to England with some black ore, which being supposed to contain gold, induced queen Elizabeth to patronise 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 honored with knighthood for his services. In the years 1590 and 1592, he commanded squadrons against the Spaniards, and took many rich prizes. In 1594, he was sent with 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. (See *Rana*.)

Frog-Fish; a species of *lophius*, 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-tuberculate on the back and edges of the jaws; scales, imperceptible; dorsal fins, two; pectorals, large and fleshy, somewhat resembling paws; several movable rays project from the head, which are moved about in the water, while the animal is concealed 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 stomach is very large; the intestines short. In length, 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 small, and defended by an overlying membrane; and, consequently, these fishes are capable of existing many hours out of the water without much apparent suffering.

Froissart, John, a French poet and historian, born in 1337, at Valenciennes, where his father appears to have been a painter of armories, 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 20, 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 cure him of a passion he had conceived 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 with great favor, Philippa of Hainault, 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. After travelling through Scotland, he accompanied the Black Prince to Aquitaine and Bordeaux, and even wished to follow him in his campaign in Spain, against Henry of Trastamare. He afterwards went with the duke of Clarence to Italy, when this prince married the daughter of Galeazzo Visconti, and directed the entertainment which Amadeus VI of Savoy gave in honor 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 Béarne 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 so much openness and *naïveté*, that 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. After he had gone through many adventures, 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, England, Scotland, Spain and Brittany, 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 1503, 1514, 1518 and 1530. Other editions have appeared at Paris and at London, and an English translation by Thomas Johnes, in 1803, with a supplement 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 Dacier, was interrupted by the revolution.

Fronde; a party during the minority of Louis XIV, which opposed the court and cardinal Mazarin, whom the queen-mother had appointed prime minister, after the decease of Louis XIII (1643). 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 repeatedly 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 any thing 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 (*Frundsberg*,

Freundsberg or *Fronsperg*), lord of Mindelheim, general of the imperial troops, born in 1475, died at Mindelheim, in 1528, formed his great military talents in the wars of the emperor Maximilian I against the Swiss. In 1504, he already passed for one of the bravest knights in 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 Philibert 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, made such an impression on the old general, 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 Cette and Montpellier. There are two kinds, the red and the white. Epicures use it with some kinds of fish.

Frontinus, 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 Stratagematibus* (Leyden, 1731; Leipsic, 1773; and by Wiegemann, Göttingen, 1798), and his work *De Aquæductibus Urbis Romæ* (Padua, 1722—32; and Altona, 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 honor of him, and in his Meditations also makes honorable 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 Buttmann and Heindorf. Between Fronto and Cicero, the distance is too great to permit us, like Maio, to call him *Romanæ eloquentiæ non secundum, sed alterum decus.* As little 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*, Nuremberg, 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 so much from it, and many are entirely 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 oaks 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 rob it 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 he be rubbed in the snow, he may often recover. The same is the case with regard to the frozen limbs of men and 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 meat, which appears to be 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. Frost, being produced 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 16 or 17 days' frost, Mr. Boyle found it had penetrated 14 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 10 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 less loud than if many guns were discharged 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. 165.) The close of the year 1708, and the beginning of 1709, were remarkable, throughout the greatest 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, meat 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. Brandy and spirit, set out in the open air, freeze to solid ice in three or four hours. Lakes and standing waters, not above 10 or 12 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. (q. v.) 65 deputies (Pichegru, &c.) were condemned to deportation, as guilty of a conspiracy for the restoration of the monarchy; and with them, Barthélemy. Carnot escaped. The councils renewed their oath of hatred against royalty on this occasion. (See *Calendar*.)

Frugoni, Carlo Innocenzo, a celebrated and prolific poet, was born at Genoa, in 1692, and was obliged to renounce his patrimonial inheritance in favor of his two elder brothers, and to embrace the ecclesiastical profession. He entered, in 1707, the congregation of the brothers of Somasquo. 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 *Arcadian colony*, as it was called, in which he bore the name of *Comante Eginetico*. 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 afterwards at Bologna) the young ecclesiastics of his order. In Modena, he caught the small-pox, and, during his convalescence, finished the Italian translation of the *Rhadamiste* of Crébillon. By the patronage of cardinal Bentivoglio, he found an honorable 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 wife was thought pregnant. Frugoni celebrated the fulfilment of the general wishes by a series of 25 beautiful sonnets, but his prediction was not accomplished. He could win no favor 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 canzone, 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 to the court of Parma. The war which had broken out in Italy between Spain and Austria, furnished 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, Bertoldino e Cacasenno*, upon which twenty poets labored. 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 change. Few 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 9 volumes, was published at Parma in 1779, and a complete edition in 15 volumes, at Lucca. A selection was published in 6 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.

Fruitbearing Society, or Order of Palms; a society founded in 1617, at the castle of Weimar, by Kaspar von Teutleben, governor of the young prince John Ernest, having for its object the preservation and restoration of the purity of the German language, which was in danger of losing all its peculiarities by the introduction of foreign words and idioms. Five German princes took part in its foundation; three dukes of Weimar, and two princes of Anhalt. The society numbered also Charles Gustavus, 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 precedency, 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 *unterstand* (subject), have never come into use. The society continued down to 1680, 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 no 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, and the caterpillars which are often so numerous in our own land, justify us in attrib-

uting 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, 262,280; 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.

Fry, Elizabeth, an English lady of the sect of Friends, or Quakers, distinguished for her benevolence, the originator of the Newgate female committee, was born in 1780. Before her marriage, she established, with the permission of her father, a member of the society of Friends, a school for eighty poor children, in his house. In 1800, she married Mr. Fry, who has generously seconded her benevolent inclinations. The dreadful state of the prison for women at Newgate, induced her to visit it. She entered fearlessly the room where a hundred and sixty women and children surrounded her in the wildest disorder. But her noble air and her pious expression exacted respect from these abandoned creatures. She offered them her assistance; she spoke to them words of peace, of hope, of consolation. All listened to her with astonishment, for such a friend they had never found. Mrs. Fry repeated her visit, and passed a whole day among these unfortunate wretches. "I do not come (she said) without being commissioned; this book (showing them a Bible) has led me to you. I will do for you every thing that I can; but you must assist me." She then read to them the twentieth chapter of the Gospel of Matthew. Many of these unhappy creatures now heard, for the first time, the words of Christ. She now founded in the prison a school for the children, and soon succeeded in awakening the feeling of maternal affection in the breasts of the rudest of their sex. At the same time, she formed a society of twenty-four women, of the sect of Friends, under whose inspection one of the prisoners, called the *matron*, was to superintend the conduct of the others. She then read to them, in presence of the lord mayor and one of the aldermen, some rules which she had drawn up, and, at each article, asked them if they would consent to it. They did so unanimously. Thus Mrs. Fry, by her exertions during several years, succeeded in changing the prison of Newgate from a receptacle of vice into an asylum of repentance and a school of industry.

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 coriaceous, membranaceous or cartilaginous, hardening when dried, and becoming sometimes 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 protuberances, 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 falling, leave little points on the surface of the fronds. Some *fuci* are transparent, but their color is usually 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 nutrition takes place by absorption from the whole 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 well ascertained, but usually they are perennial. Very few, if any, are parasitic, though great numbers of *polypi* and *algæ* 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 natans*, which has multiplied prodigiously between the tropics, forming floating masses, that cover extensive portions of the ocean, and are 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 broil 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 swallows' nests, so celebrated throughout the East Indies, consist, according to some writers, only of *fuci* in a state of partial decomposition. 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 a few sticks at the bottom, which, 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 producing moderate or gentle heats as can 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. It is only the vapor 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, by being accumulated on 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 water, the water does not evaporate so fast from the wick as the more spirituous 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 burning in a similar manner, 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 we can prevent this entirely by using very small 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, scorch 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 incombustible materials, as asbestos or wire; but still, as 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 we 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 gained by charring are considerable. 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 spiracles, 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 to ashes, were it not covered all over with earth or clay, beaten close, leaving openings at all the spiracles. 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 vapor being gone, and the burning of the true coaly matter commencing. Thus 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 lead melted and red hot. This kind of fuel is very much used by chemists, and has many good properties. It kindles quickly, emits few watery or other vapors 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 *coaks*, have, in many respects, the same properties as charcoal of wood; as kindling more readily in furnaces than when they are not charred, and not emitting 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, drossy 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 before it is consumed. The heat produced by equal quantities, 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 fuel, make it unfit (or less fit) for many purposes in chemistry. For, besides obstructing the vents with sooty matter, they 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 great and sudden variations of the heat of a furnace are quite inconvenient in most chemical processes. In the greater number of chemical operations, therefore, it is much more convenient to use charred fuel, than the same fuel in its natural state.—It is proper to be on our guard against the dangerous nature of the burnt air which arises from charcoal of all kinds. Charcoal burns without visible smoke. The air arising from it appears to the eye as 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 are aware of it. The air 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 falling. 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 hartshorn, 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 the 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 air be admitted, it gives no flame, but sooty vapor, and a diminution of heat. And if much air be admitted, to make those vapors break out into flame, the heat is too violent. These flaming fuels, however, have their particular uses, for which the others are far less proper. For flame, when produced in great quantity, and made to burn violently, by mixing 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 vapor, 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 applied to these last, it can only act on their surface, or the particles of them that are outermost; whereas, flame being a vapor 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 flame, which is the consequence of this, does 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 reason, in many operations performed on large quantities of metal, or metallic minerals, in the making of glass, and in the baking or burning of all kinds of earthen

ware. 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 produced in 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 vapor 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 great 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 burnt. 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 consumption is less rapid; but to 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 Henriquez d'Azevedo, 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 lancers. He gained equal distinction in the 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 Milan, and rendered himself formidable to the Italian princes and republics, 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 Valteline, called by his name, which was an object of great jealousy to the Grisons. In the war with France, in 1635, so unfortunate for 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 1643, sent Fuentes, then at the age of 82, 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.

Füger, Frederic Henry, director of the imperial picture-gallery in Belvedere, at Vienna, court painter, professor, and member of the imperial academy of the fine arts, was born at Heilbronn, in 1751, where his father was a clergyman. He was extremely fond of drawing, even while at school, and at the age of 11, he painted miniatures without assistance. The sight of Audran'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 had 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. Füger here painted many portraits (including miniatures), and historical pieces. He has left also 20 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 Leipsic. Leybold has copied them on a larger scale for Frauenholz's edition. One of the last and most beautiful of Füger's works, is his John in the Wilderness, painted for the imperial chapel, in 1804, for which he received 1000 ducats. Füger died at Vienna, Nov. 5, 1818.

Fugger Family. The founder of this family was John Fugger, a weaver in the village of Graben or Göggingen, 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 12 weavers who sat in the council, and was one of the *Freischöffe* 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 F. 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 Austria, and Maximilian, who was often in want of money, always found them ready to assist him. For 70,000 gold florins, he pledged to them the county of Kirchberg and the lordship of Weissenhorn for 10 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. James attended to mining. He farmed the mines of Schwatz in the Tyrol, and became immensely rich. He built the magnificent castle of Fuggerau 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, Carniola and Carinthia, and thus obtained great riches. Their goods were sent to every country. The family rose to its highest splendor 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 bannerets. 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 the right of striking gold and 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 Charles, 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 Honor, "contained, in five branches (1619), 47 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 94 years, they bought real estate to the amount of 941,000 florins, and, in 1762, owned 2 counties, 6 lordships, and 57 other estates, besides their houses and lands in and around Augsburg. The first and highest places of the empire were held by them, and several princely families thought themselves honored 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 honors 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 favor 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 above 14,000 tenants, and 80,000 florins revenue. Count Anselm Maria, prince 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 Rettershausen were erected into the principality of Babenhausen. He died November 22, 1821. The principality of Babenhausen, whose capital is the market town of the same name on the Günz, 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 440 square miles, with 40,000 inhabitants.

Fugue; a term derived from the Latin word *fuga* (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 distributed 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 Henneberg, south by the bishopric of Würzburg, and west by the principality of Isenburg and Hesse; about 40 miles in length, and from 7 to 25 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 grand-duchy, 890; population, 116,000.

Fulda; city of Hesse-Cassel; since 1817, capital of the above grand-duchy of the same name; situated on the Fulda, 43 miles east Wetzlar, 63 east-north-east Mentz; lon. 9° 44′ E.; lat. 50° 34′ N.; population, 8300; houses, 990. It is the see of a bishop. It has manufactures of woollens, linen, and earthen ware, and four Catholic churches, one Lutheran, a Franciscan convent, three hospitals, and a gymnasium. Here was formerly a Catholic university, founded in 1734, which has been converted into a lyceum with six professors. The library contains a number of ancient and rare manuscripts.

Fulgurite is the name given to those conglomerations of grains of quartz half-melted together by lightning, and of a cylyndrical form, which are sometimes found in small sandy hollows. They are generally in a perpendicular position, are sometimes 30 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 sand in which they are found is red. 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 17th 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 hainous Sin, heartie Repentance, and heavie Punishment, 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 Holy State (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 Pisgah Sight of Palestine and the Confines thereof, with the History of the Old and New Testament acted thereon (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 Church History of Britain, from the birth of Jesus Christ to the year 1648; to which was subjoined the 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 profusion of biographical anecdote and acute 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, that species of wit was much admired. Among the many marvellous stories told of 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 1810 (2 vols. 4to.).

Fuller; one employed in woollen manufactories to mill or scour cloths, serges, and other stuffs.

Fuller's Earth; a well-known mineral, generally of a greenish white color, 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 woollen cloths, 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 Wavedon, near Woburn in Bedfordshire. We have noticed the valuable property of this earth of taking grease out of woollen and other cloths, 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 intertwine during the fulling. The cleansing property of this earth depends entirely on its alumine (q. v.), 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 injure the cloth. As an article of domestic

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 *milling*, because these cloths are in fact scoured by a *water-mill*. The principal parts of a fulling-mill are the wheel, with its trundle, which gives motion to the tree or spindle, whose teeth communicate that motion to the pestles or stampers, which fall into troughs, wherein the cloth is put, with fuller's earth, to be scoured 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 elastic state with such rapidity that the concussion of air produced gives rise to a loud report. 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 chlorate 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 the chlorate, one of the sulphur, and one of charcoal, 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 double paper.

FULMINIC ACID; a peculiar acid, known only in 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 MM. Gay-Lussac and Liebig, the acid of the salt is composed of 26 parts, or one atom, of cyanogen, and 8 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 Wöhler (for an account of which, see *Prussic Acid*). (See *Silver*, for *fulminating silver*, and *Mercury*, for *fulminating mercury*.)

FULTON, Robert, the celebrated engineer, 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 17 years, he painted portraits and landscapes, in Philadelphia, where he remained till he was about 21. In his 22d 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 his 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, so famous for 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. Even at that early period, he had conceived the idea of propelling vessels by steam; and he speaks in some of his manuscripts with great confidence of its practicability. 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 and commerce, an improvement of his invention on mills for sawing marble, for which he received the thanks of the society and an honorary medal. He also obtained patents for machines for spinning 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 talent for drawing and painting. 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 lived seven years in the family of Joel Barlow, during which time he studied the higher 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 carcasses 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. We must now revert to an early period of Mr. Fulton's life, to trace the progress of that great improvement in the arts, for which the world is so much indebted to him—we mean, *the practical establishment of navigation by steam.* At what time his attention was first directed to this subject, is not known; but it is ascertained, that, in 1793, he had matured a plan, in which he had great confidence. The evidence of this is his letter to lord Stanhope, dated September 30, 1793. It is impossible to say what progress he had made in his plans for steam-boat navigation previously to 1801, when he and chancellor Livingston met in Paris. His papers, however, render it evident, that the application of water-wheels, as they are now used in this country, was among his first conceptions of the means by which steam vessels might be propelled. He had given to Messrs. Watt & Bolton instructions for constructing the first engine, which was successfully used in a boat; yet he made no pretensions, as an *inventor*, with respect to the engine. On the contrary, he was often heard to declare, that he did not pretend himself to have made, and did not know of any improvement that had been made by any other person, upon engines which were constructed according to Mr. Watt's principles. The limits of this work will not permit us to examine the pretensions of those who claim to have preceded him in the application of steam to navigation. That it was not successfully accomplished by any one prior to the execution of his plans, seems to be proved by the acknowledged fact, that though, in several instances, boats had been made to move by the force of steam, yet not one, either in Europe or America, had ever been made practically useful.* Robert R. Livingston, minister to France, met Mr. Fulton there, and communicated to him the importance of steamboats to their common country, informed him of what had been attempted in America, and advised him to turn his attention to the subject. They immediately proceeded to make experiments on the subject, the principal direction of which was left to Mr. Fulton. After some trials on a small scale, they built a boat upon the Seine, under the direction of Mr. Fulton, in 1803, which was completely 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. February 11, 1809, Mr. Fulton took out his first patent for his inventions in 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 steamboats were built under Mr. Fulton's directions, 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 *twin-boats;* each of them being two complete hulls, 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

* See Walsh's *Appeal against the Judgments of Great Britain,* for a full discussion of this topic.

new plans and experiments relative to sub-marine warfare; of the construction of the steam-frigate which bore his name; of the modifications of his sub-marine boat; of his vexatious and ruinous lawsuits, 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, to which we are indebted for the materials of this article. Mr. Fulton died February 24, 1815. In person, he was about six feet high, slender, but well 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 miasmata, or effluvia. The most efficacious substance for this purpose is chlorine (q. v.); next to it, the vapor of nitric acid, and lastly that of muriatic acid. The fumes of heated vinegar, burning sulphur, or the smoke of exploded gunpowder, deserve but little attention as antiloimics.

Funchal, or Funchial; 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 harbor is defended by several batteries and a castle. It contains 6 parishes, 1 cathedral and 7 other churches, 4 convents, and 3 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 English residents ship to England 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 aliment 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 England, 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 those taxes and other public imposts, 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 flows, and which was 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 current year. As 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 financiers, *perpetual* or *redeemable annuities*, and, in common life, *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 90 or 100 years (in the time of king William III, they brought 10, 12 and 14 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 10, 20, at most 30 years, as an indemnification 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 bring. As often, 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 3 per cent., of which the far greater part of the public debt consists, is enormous. It is yet augmented by the stock-jobbing—a kind of traffic consisting in a contract, which two parties make for 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 honor of the parties is the only pledge for the fulfilment of their engagements, yet the business transacted in this way is very considerable. (See *Public Stocks*, *National Debt*, &c.)

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 12 leagues across from St. John's, N. B. to the gut of Annapolis, N. S. Here the tides rise 30 feet. In the basin of Minas, the eastern arm of the bay, the tides rise 40 feet; and at the head of the north-eastern arm, called *Chignecto channel*, they rise 60 feet. These tides are so rapid as to overtake animals feeding on the shore.

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 35 miles, and from E. to W. about 30; population, 112,000; square miles, 1194. It is a fertile and pleasant island. Most of the Danish nobility 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. Odensee is the capital. Lon. 9° 40′ to 10° 50′ 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 the dead; 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 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 influence of religious opinions in many 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 vol. 7 of the Asiatic Researches. The 4th volume of the same work contains a description of the forms 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 series of obsequies commences 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 forthwith 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 acquiesce without a murmur in the will of God. 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 viii volumes.) The Egyptians, it is well known, embalmed 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 30 days in nitre, and during 40 were anointed with gums and spices, *Gen.* l. 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 Jews, seems to 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 burned with him. The ashes were then collected and deposited in an urn. This description applies to the Greeks and Romans, whose rites were nearly identical. Inhumation was the original practice of the Romans; nor did burning become common till the end of the republic. The practice of burying by night explains the origin of the word *funeral* (*funus*, from *funes*, torches). Eulogies were often delivered at the funerals of distinguished men, both in Greece and Rome, and funeral games were exhibited, in honor of the dead. Burning was not disused till the close of the 4th 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 vessel of holy water at the feet, 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 thrice with holy water, and the *De profundis* and *Miserere* are chanted. The body is carried to the church, during which time psalms are chanted, especially the *Miserere*, and, at the close of each, a requiem. In the church, the office of the dead is performed, and 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, *Si iniquitates* and *De profundis*, 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 3d, 7th, and 20th day after interment, and on their anniversaries. The wake, or watching, is celebrated in some parts of Great Britain; in the Scotch Highlands, a piper is in attendance, and, though the nearest relation opens the ball with loud tokens of sorrow, it is kept up by the others all night, with little show of grief. In North Wales, the *wyl nôs* is kept with more 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 ululation has often been described. In the north of England, 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 Mhic Allister, Glengarry, chief of the Macdonnels, when 150 gentlemen sat down to dinner, and 1500 attendants were regaled with bread and cheese and whiskey. The law requiring that a corpse should be buried in none but woollen stuff, was repealed in the reign of George III. (See the article *Funeral Rites*, in the *Encyclopædia Metropolitana*, which contains references to numerous sources of information.)

Funes, Gregorio; a patriot of La Plata, extensively known by his *Ensayo de la Historia civil del Paraguay, Buenos Ayres, y Tucuman*, 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, 1826, presented their celebrated report, recommending 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, at a very advanced age, January 11, 1829. His Essay on the History of Paraguay, Buenos Ayres and Tucuman, is a valuable work, compiled from the best materials, including many unpublished manuscripts, and adds greatly to our stock of information upon the subject of which it treats.

Funfkirchen, or Five Churches, or Pets; a royal free town in Hungary, 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° 45′ E.; lat. 46° 5′ N.; population, 8487; houses, 2000; bishop's see. It is situated on 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, 7 churches, several monasteries, a public library of upwards of 20,000 vols., a military and a civil academy, and 2 hospitals. Each of the churches and monasteries has two or more steeples. It is the most considerable trading town in this part of Hungary, and is noted for its tobacco, and for the swine and cattle sold at its markets. A university was founded here in 1364, by Louis I, at one period containing upwards of 2000 students, but was destroyed after the battle of Mohacs, in 1526, and not afterwards reëstablished. The Jesuits founded a college here in 1694, which grew into much repute.

Fungi; an extensive family of plants, belonging to the Linnæan class *cryptogamia*. Many of the species are commonly called *mushrooms*. These plants vary greatly in size, form, color and consistence. They frequently have the form of a parasol, or are filamentous, membranaceous, tuberous, frothlike, &c. They are found of all colors, except green, but their prevailing hue is grayish-white, or yellowish. Their consistence is coriaceous, fleshy, spongy, gelatinous, corky or ligneous, but never herbaceous. 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 minute colored globules, which are considered reproductive, and analogous to the seeds of other vegetables. The situation of these globules is different in the different genera; sometimes internal, as in the truffle and puff-ball, or covering the entire surface, in laminæ on the inferior surface, at the opening of tubes, in furrows, capsules, or upon particular appendages, either attached on one side, or floating in mucilaginous matter. The abundance of these globules in some fungi is incalculable. 2400 species of fungi are now known, which are distributed in about 80 genera. No other vegetables grow and develope themselves so quickly as fungi. It is not unusual 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 certain 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 surface of the earth; but none are truly aquatic, 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 odor, by which their presence may be recognised. Their taste is insipid, or sometimes nauseous, acrid, styptic, or caustic, and in 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 consumed in vast quantities. In some parts of Italy, the inhabitants have been at times reduced entirely to this aliment. They are cultivated in layers throughout 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 exceedingly poisonous, producing nausea, vomiting, convulsions, and speedy death. It has been observed, that acids diminish considerably the deleterious 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 require the parts of fructification only to be removed; but, besides the poisonous species, all are liable to become pernicious, 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 moderation. As the poisonous species can be distinguished by no common character, 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 labor; as blight, mildew, &c.

Funk, Godfrey Benedict; born at Hartenstein, in the county of Schönburg, in 1734. His education, till his 13th 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 Cramer; but, in the following year, Cramer, then court minister at Copenhagen, invited him into his house as a tutor to his children. Funk remained with him 13 years, studying theology, and became intimately acquainted with some distinguished men, among whom was Klopstock. In 1769, he was appointed 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 honor of the counsellorship 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 *Scholæ, ecclesiæ, patriæ decus.* His works have been published in two

volumes, with a biography. Funk published several school books, very popular in a great part of Germany.

Furca, or Fork 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, Erinnyes (among the Romans, *Furiæ*, and *Diræ*); deities in the Greek mythology, who were the avengers of murder, perjury, and filial ingratitude. They sprang 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 Night. Later mythologists reckon three of them, and call them *Alecto*, *Megæra* and *Tisiphone*. Æschylus, in the celebrated 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 blood, from whom, when satiated, the blood streamed down their necks, and from whom, when enraged, oozed a venom, that spread like a leprosy-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 *venerable goddesses*. With the progress of good taste and information among the Greeks, the mythology of these frightful fiends underwent several changes. The sculptors, proceeding on the idea of their being hunters of men, represented them as beautiful hunting nymphs, whose character was indicated only by the sternness 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 excellent treatise on this subject has been written by Böttiger, entitled *Die Furienmaske im Trauerspiel und auf Bildwerken der alten Griechen* (Weimar, 1801).

Furt; a German ending of geographical names, meaning a ford in rivers; as, *Frankfurt* (Frankfort), *Klagenfurt*.

Furth; a manufacturing town in Bavaria, in the circle of the Rezat, at the conflux of the Rednitz and Pegnitz; 4 miles W. of Nuremberg; population, 16,700; 7000 Jews. It contains 2 churches, 4 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.

Furze (*ulex Europæus*) is a low, shrubby plant, very hardy, and very abundant in barren soils throughout the west of Europe. It belongs to the natural order *leguminosæ*. The stem is two or three feet high, very much branched, and the branches spiny at the summit; the leaves, simple; the calyx, persistent, bipartite; 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 *whin*, as it is sometimes called, is also sometimes used for fuel. This plant is exceedingly difficult of extirpation when it has once obtained possession, and might not prove a desirable acquisition were it introduced into the U. States.

Fur Trade. The Indian or fur trade commenced early in the 17th century, and was carried on by the early French emigrants. Quebec and Montreal were, at first, trading posts. The trade was then, as now, a barter of guns, cloth, 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 burthens of merchandise on their backs to the Indian camps, and exchanged their wares for peltries, with which they returned in the same manner. 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 exertions 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 of England, he granted to prince Rupert and others, a charter, empowering them to trade, exclusively, 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 was, at that time, at 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 servants of the parties, and a loose was given to outrage and barbarity. Wearied, 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 coming to the U. 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 races. The Indian trade 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 *Columbian 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 employ 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 Indians, to avoid the provisions of the law) 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 Saques 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, bear, deer, lynx and buffalo. Racoons are now of little value. The fur-clad animals, with the exception of the musk-rat, are now 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 further north the furs are taken, the better is their quality. The course of a trader in the North-west is this: He starts 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. These buildings are of 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 $20 to $200 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 remote 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 is overcome, and often 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 once tasted, become extravagantly fond of them, 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 $300 to $800 per annum, each. Some traders venture into the Indian country on their own 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 better for the savage that they should be. Traders are always better clad 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 cheaper and more easily. Those 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. The fur trade demoralizes all engaged 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 overcomes religion 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 hundreds of miles beyond his former haunts. 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 few 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 rigor 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 has existed within the territory of the U. States.

Fuseli, Henry, second son of John Gaspard *Fuessli*, 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 Mi-

chael Angelo, with whose peculiar merits and style 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 the zeal and 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 connexions to secure him impunity. A pamphlet which appeared from the pens of Fuseli and Lavater compelled the superior authorities 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 at that court, 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 tutor to a nobleman's son, whom he accompanied to Paris. On his return, in 1765, appeared his first literary 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 Shakspeare—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 alderman Boydell the idea of forming the Shakspeare gallery, for which institution he painted eight of his best pictures. In 1790, he became a royal academician, and in the course of the next nine years painted a series of 47 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 on a 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 197° Fahr.

Fustic Wood is of a yellow color, and contains great quantities of coloring 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 colors, as, when employed alone, it is dull and deficient in clearness. This wood is the product of the *Broussonetia tinctoria*, 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 U. States, extending as far north as the river Arkansas, 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 *maclura* of Nuttall. It is described as attaining the height of 60 feet and upwards in the West Indies, but in Louisiana it reaches only 25 or 30, 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.

Fux, John Joseph, a celebrated contrapuntist and composer of sacred and theatrical music, during the reigns of the emperors Leopold I, Joseph I and Charles VI, born in Stiria about the year 1660, was imperial chapel-master in Vienna, and held this office about 40 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. Fux 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 Leipsic.

Fyt, John, 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. Willebort; 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 coloring, glowing and vigorous; the colors, especially in the light, laid on richly. In all these qualities, he rivals De Voes and Snyders. 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, l. 2, page 417, *Putsch*. The Romans began to use it late, and, therefore, *c* and *g* are often written for each other, as *Gaius* for *Caius*. The Romans also sometimes used it for *n*, before *g*, from the Greek, as *aggelus*, for *angelus*, *iggerunt* for *ingerunt*; and even Ulphilas writes *gg* for *ng*, as, for instance, *figgr* for *finger*, *aivaggelgo* for *evangelium*, *tuggo* for *tongue*. For the etymologist, it is important to know that, in German, the *g* often does not belong to the root, but is merely a contraction of the common German augment *ge*, as in *gunst*, from *ge-anst*, *glied*, from *ge-lied*. The sound of *w*, or *v*, very nearly approaches that of *gu*, and we often find them interchanged; for instance, *William* or *Wilhelm* into *Guillaume* or *Guillielmo*, *Vasco* into *Gascon*; and Spaniards, when they are unable to pronounce the English *w*, often use *gu* instead, and say *guee* 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 monosyllable *sol*. It is also one of the names of the highest cliff.

Gabalis (*Comte de Gabalis, ou Entretiens sur les Sciences secrètes*); a romance of the last part of the 17th century, the author of which, the abbé de Villars, a relation of the antiquary Montfaucon, 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 *Chiave del Gabinetto* of Borry. 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 sci-

ence, 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 poesy, 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." After this introduction comes the theory of the four spirits of the elements, which are the Sylphs (spirits of air), the Undines (spirits of water), the Gnomes (spirits of earth), and the Salamanders (spirits of fire). How welcome such a system of pneumatology was to the poets, whom the Christian religion had deprived of their mythological 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.

Gabler, John Philip; born June 4, 1753, at Frankfort on the Maine, where his father was actuary. After having become acquainted with the ancient languages and classical literature, with Wolf's philosophy and Baumgarten's theology, he entered the university of Jena, in 1772. The ardent and inquisitive youth could not be satisfied with the study of theology as then conducted; but the lectures of Griesbach (who came to Jena in 1775), who, a short time before, had published his New Testament, reconciled him to it. In 1783, he was made professor of philosophy in the gymnasium at Dortmund, and two years after he received a professorship in Altdorf. In 1804, he was appointed professor of theology at Jena, where, in 1812, after the death of Griesbach, he came into the office of first theological lecturer, and died February 17, 1826. In his writings, which are principally devoted to the criticism and explanation of the New Testament, he showed himself an acute reasoner and a profound scholar, free from prejudice, every where following his convictions; as, for instance, in his System of Hermeneutics of the New Testament (Altdorf, 1788), and a Historical Critical Introduction to the N. T. (at the same place, 1789). His edition of Eichhorn's *Urgeschichte* has much merit. A supplement to this is his New Essay on the Mosaic History of the Creation (Altdorf, 1795). The Theological Journal, which he published originally with Hänlein, Ammon and Paul, but subsequently alone, contained, from 1796 to 1811, a series of valuable essays of the most distinguished writers in the theological department. His programmas and dissertations are, mostly, of an earlier period. In 1824, he published *J. J. Griesbachii Opusc. Academ.*

Gabres. (See *Guebres.*)

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 Savior. The rabbins 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 theology, he is one of the four angels peculiarly favored by the Deity, employed in writing 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 falling, which he had overturned on his departure.

Gadfly. (See *Œstrus.*)

Gadsden, Christopher, lieutenant-governor of South Carolina, was born in the year 1724. In 1765, he was chosen one of the delegates from his colony to the congress, which was convened at New York in October of that year, for the purpose of petitioning against the stamp-act. He was, perhaps, the first man in South Carolina, who foresaw and foretold the views of the British government; and when the obnoxious act was repealed, he did not, like most of his fellow citizens, per-

mit himself to be deceived by this measure, but continued to urge the impossibility of a reconciliation. In 1774, he was again chosen a member of congress, and received the thanks of the legislature of the province, for his services, on his return two years afterwards. Aug. 27, 1780, some months subsequently to the capitulation of Charleston, during the whole of the siege of which he remained within the lines, he was taken out of his bed and transported to St. Augustine in a guardship, together with most of the civil and military officers, in violation of the rights of prisoners on parole. At St. Augustine, he bore a rigorous confinement of 42 weeks in the castle, rather than accept the parole that was there offered to him, or, in his own words, enter into a new contract with men who had once deceived him. In 1782, he was elected governor of the state, but declined the office on the ground of being incapacitated, by his age and infirmities, from discharging its duties with the vigor which the times required. He remained, however, in the assembly and council, where he strenuously opposed the law for confiscating the estates of the adherents of England, although he himself had suffered great losses of property amid the disturbances of the times. He died in September, 1805, in the 82d year of his age.

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 Teutonic word *Wallen*, pronounced *Vallen*, signifying *to wander*, as is also Wallia or Gallia, Vandals, 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*, i, 33, 38, 16; *Flor.* 2, 11.) From Gaul, they passed over into Britain and the adjacent islands. The ancient Caledonians, Picts and Scots are of the same origin, as are also the Welsh, as the name *Wales* (in French, *Galles*) indicates. Upper Italy, part of Germany, down along the Danube to Pannonia and Illyricum, and Helvetia, were occupied by their colonies. At the period when history first gives any 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 Kymri; on the other, by the Romans, and, finally, overpowered 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 Celtic language, which is 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, particularly in the inflexions 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 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 chapel was opened in London, for the performance of divine worship in Gaelic, according to the forms of the church of Scotland.

Gaëta, duke of. (See *Gaudin.*)

Gaëta, a Neapolitan fortress, on the gulf of Gaëta, lon. 13° 32′ E., lat. 41° 5′ N., with 10,300 inhabitants, is the see of a bishop, and is situated about 20

leagues from Rome, and 12 from Naples, upon a promontory, which, according to Virgil (*Æn.* vii. 1.), has its name from Caieta, 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. Gaëta is one of the strongest fortresses of Europe, as it can be attacked by land only from a narrow isthmus. The environs of this ancient city are enchanting, and the many pretty villas in the suburbs (the ancient Romans built many country houses here along the fertile coast) render the whole scenery, with its vineyards and olive-gardens, very romantic. In the middle ages, Gaëta was besieged several times, particularly in 1435, by king Alphonso of Arragon. In modern times, it has sustained three memorable sieges; in 1702, when it was taken by assault by the Austrians, after a 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 Gaëta surrendered July 18th, after a siege of five months.

Gage, Thomas, the last governor of Massachusetts appointed by the king, was an officer of distinction in the British army. He came to America as a lieutenant under general Braddock. He was present in the battle in which that general received his mortal wound, and, assisted by another officer, carried him from the field. In 1758, he held a colonel's commission. He was appointed governor of Montreal in 1760, and, in 1763, succeeded general Amherst as commander-in-chief of the British forces in North America. In 1774, he succeeded Hutchinson as governor of Massachusetts, and, being furnished with several regiments to support his measures, soon began the course of illegal and oppressive acts, which drew on the war of the revolution. In 1775, the provincial congress of Massachusetts declared him an enemy to the colony, and released the inhabitants from all obligation to obey him. Not long after, he returned to England, where he died in 1787.

Gagern, Hans Christopher Ernst, baron of; born 1766; a political writer, orator and statesman, ambassador extraordinary and minister plenipotentiary of the king of the Netherlands, as grand-duke of Luxemburg, at the German diet, and to the free city of Frankfort. He went, after the peace at Luneville, to Paris, where he was one of the negotiators most distinguished by Talleyrand. He afterwards quitted the service, and went to Vienna. About this time, he wrote a work distinguished for spirit and information, which appeared without his name—the Results of the History of Manners. At Vienna, in 1812, appeared the first volume, in quarto, of the National History of the Germans—a work that excited great attention. The second, improved edition, in octavo, appeared at Frankfort on the Maine, in 1823; the second volume (extending to the dominion of the Franks), in 1826. He took part in a plan for a new insurrection in the Tyrol, 1812—13, but, this failing, he retired from Austria, and went to the Russian-Prussian head-quarters, and thence to England. In 1814 and 1815, he was employed in very important services by the house of Orange. In 1815, he went to Paris to the congress, effected the augmentation of the new kingdom of the Netherlands, insisted in vain on the restoration of Alsace to Germany, and contributed to the restitution of the works of art to their former owners. He appeared, till 1818, in the meetings of the diet of the German confederation, where he displayed much talent, independence, patriotism, and zeal for the welfare of Germany. He has published *Pièces rélatives au dernier Traité des Puissances Alliées avec la France* (Frankfort, 1816), and other works.

Gail, Jean Baptiste, a distinguished Greek scholar, born at Paris in 1755, was made professor of the Greek language in the *collège de France*, in 1792. At that time appeared the first edition of his Idyls of Theocritus (Greek, French and Latin, Paris, 1792). In 1809, he was received into the third class of the national institute. In 1814, Louis XVIII conferred upon him the cross of the legion of honor, and appointed him, in November of the same year, superintendent of the Greek and Latin manuscripts of the royal library. For several years, he lectured publicly upon the Greek language and literature. His bold attacks upon facts generally admitted (particularly in his *Recherches historiques et militaires sur la Géographie comparée par Époque*, where he wished to strike from the charts the two ancient cities Delphi and Olympia, and give an entirely new view of the battles of Mantinea, Platea and Marathon) ex

posed him to the censure of his colleagues. Three collections of Gail's editions of Greek writers, with Latin and French translations, have appeared. Among them are Thucydides, Xenophon, the three pastoral poets, several works of the Attic orators, of Lucian, some dialogues of Plato, Anacreon, &c. The 15th and 16th volumes of his partly controversial journal, *Le Philologue, ou Recherches hist., geograph., milit., etc.*, appeared at Paris, in 1824.

Gailliarde (Italian, *Gagliarda*); 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 *Caius.*)

Galactometer (*milk-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 third water; the fourth, milk with 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; 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, surprising 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 (*Celtes*); thence also the name *Gallogræci*, and later, *Galatæ*.

Galaxy (*Via Lactea*, or *Milky Way*), in astronomy; that long, luminous track or zone, which encompasses 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 feet 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, Serpentarius, the head of Cepheus, and returns into Cassiopeia. The ancients had many singular ideas as to the cause 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 15° long, by 2° broad, no less than 50,000 stars. This, however, instead of satisfying the curiosity of astronomers, only gave rise to farther inquiries and hypotheses; amongst others, that of doctor Herschel, which is very interesting. He supposes the sidereal universe to be distributed into nebulæ 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, doctor Herschel says, it is very 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 simplicity, 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 $100,000 \times 190,000,000$ miles; therefore doctor Herschel's telescope will at least reach to $100,000 \times 190,000,000 \times 497$ miles. And doctor Herschel says, that in the most crowded part of the Milky Way, he has 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 41 minutes, he saw 258,000 stars pass through the field of his telescope. Every improvement 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, Sergius, or Servius 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 his troops to swear allegiance to 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 honors 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 became involved in great 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 indulgence to his friends, whom he suffered to rule him 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 favored by the soldiery, he selected Piso Licinianus, 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 pretorian cohorts first declared themselves in his favor, and Galba, attempting in vain to restore order, was attacked and slain A. D. 69. He was 72 years old, and had reigned three months.

Galbanum is the concrete juice of the *bubon galbaniferum*, a shrubby plant, belonging to the natural order *umbelliferæ*, and is usually imported from Syria, Persia and the East Indies. The galbanum of commerce, however, is perhaps obtained from several species of bubon. This gum-resin comes in large, soft, ductile masses, of a whitish color, becoming yellowish with age, and possessing an acrid, bitter taste, with a strong, disagreeable odor. In its medical properties, it is intermediate between ammoniac and assafœtida, which are 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, Nicon, 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 28, where he received a public appointment. A sedition induced him, when 34 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 upon himself the envy of the other physicians 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 *Theriaca*. 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. His writings give evidence of deep reflection, as well as a 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 82 genuine writings of Galen, 18 manifestly spurious, fragments of 19 which are lost, and a commentary on 18 works by Hippocrates. Of his lost works, 50 medical and 118 mostly philosophical, are mentioned in the *Bibliotheca* of Fabricius. The oldest and most complete edition, in Greek only, is the Aldine, 1525, folio, which was followed by the Greek edition of Basle, 1538, folio, and the Græco-Latin one, in 13 folio volumes, by Ren. Chartier, with the works of Hippocrates added, Paris, 1679. In 1819, doctor Kühn, in Leipsic, undertook a new edition in Greek and Latin.

Galen, Christopher Bernhard van, the

warlike bishop of Munster, from an ancient family of Westphalia, at first entered the military service, which he afterwards left for the church. In 1660, he was chosen prince-bishop of Munster, but was obliged to besiege the city on account of the opposition of the citizens. He conquered it in 1661, and built a citadel to secure his power. In 1664, 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 strong holds. The emperor having compelled him to conclude a peace, he united himself with Denmark against Sweden, 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 as much power as courage, might have become a second Alexander. He died Sept. 19, 1678, in the 74th year of his age.

Galena, in mineralogy; the sulphuret of lead, found both in masses and crystallized. The primitive form of its crystals is a cube; its color is bluish gray, like lead, but brighter; lustre, metallic; texture, foliated; fragments, cubical; soft, but brittle; specific gravity, 7.22 to 7.587; effervesces with nitric and muriatic acids; it contains from 45 to 83 lead, and from 0.86 to .16 of sulphur, generally some silver, and sometimes also antimony, zinc, iron and bismuth. Before the blowpipe, it usually decrepitates, and on charcoal is decomposed and melted, yielding a globule of metallic lead. Sometimes the silver is in the proportion of 10, 20, 40, 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 most silver, do not possess the highest lustre nor the palest color. In fact, they are sometimes blackish-gray. Galena is sometimes contaminated by silex and lime. Some varieties do not yield more than 50 or 60 per cent. of lead. Sulphuret 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 bitumen. Sulphuret of lead constitutes beds and veins, both of which are sometimes very extensive. It is found, more or less, in every country. In England, it is very abundant. It is widely dispersed over the U. States. 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 hitherto discovered. Most of the lead of commerce is obtained from galena, and usually contains 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 Fever river, on the Mississippi. It is the seat of very rich and productive lead mines, the working of which constitutes almost the only occupation of the inhabitants. In the year 1829, lead to the amount of 12,000,000 pounds was taken from these mines. The settlement of the town was begun about four years ago, and it contains at present (1830) between 6 and 700 inhabitants. The prosperity of the place has been seriously checked within the last year (1829—30), in consequence of the extremely reduced price of lead, the only article of produce which it furnishes for exportation. Agriculture is much neglected, and is prosecuted no farther than is necessary for supplying the immediate wants of the inhabitants. Mechanics of several kinds are beginning to settle in the place, and two weekly newspapers are printed there. It is regularly visited by steam-boats from St. Louis. There is a military post near the town, on the opposite bank of the Mississippi, called *Fort Armstrong*.

Galenists. (See *Anabaptists*.)

Galiani, Ferdinand, an Italian abbé, celebrated for his wit and writings, was born in the year 1728, at Chieti, 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 thus celebrating the death of eminent persons by the academy Degli

Emuli, 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, *Beatissime pater, fac ut lapides isti panes fiant* (Holy father, command that these stones be made bread); the pope took the hint, and gave him a living of 400 ducats per annum. In 1759, 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 honors and offices, and possessed of very general esteem, on the 30th Oct., 1787, in his 59th year. Besides the works already mentioned, he is the author of Treatises 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 Dialect.

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 Poland, until they fell to Austria, on the infamous partition of Poland, in 1772, and, with other provinces, formerly belonging to Little Poland, were erected into a kingdom. In 1786, the Bukowina, which had belonged to Austria since 1777, was added. By the peace of Vienna, in 1809, Austria ceded to Saxony all Western or New Galicia, a district round the 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 the horses are valued for their swiftness and hardiness. The horses of the Bukowina are particularly excellent for light cavalry. Buffaloes, 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 Bistricza contains gold. Flints of a fine quality and mineral waters are found in different parts of the country. The country is divided into 19 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 largest cities. 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. 17 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* (q. v.), from the time when the country belonged to Poland, have a superintendent at Lemberg. There is a university in Lemberg, a lyceum in Zamoski, and six gymnasiums in the principal cities.

Galicia (anciently, *Callæcia*); a province of Spain, bounded N. and W. by the sea, E. by Asturia 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 64 cities and towns, but few considerable ones, 3242 parishes, 5 cathedral chapters, and 5 collegiate chapters, 98 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 Miñano estimates them, in 1826, at 1,795,199. The inhabitants are styled *Gallegos*, and are remarkable for their quiet and hospitable disposition, and simplicity of manners, their courage 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 laborers. The name is derived from the *Callaici*, an ancient tribe, who inhabited the country, and opposed a gallant resistance to the Romans, and, in 714, to the Moors. In 1060, this province was erected into a kingdom, by Ferdinand the Great, king of Leon and Castile; 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 Savior, 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 Phœnicia, and on the N. by Syria and the mountains of Lebanon, 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 Nain, where he raised the young man to life; here lay the hill on which he delivered the precepts 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 a few oppressed 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 labors. 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 19 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 1589, 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, but then 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 after 1602 are highly important; 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 made some interesting observations 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, might be resolved in the same manner. His most remarkable discovery was that of Jupiter's satellites, Jan. 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 its axis to the plane of the ecliptic. Scheiner, at Ingoldstadt, and John Fabricius, preacher in Ostell, in East Friesland, however, have the honor 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 instructer in mathematics at Pisa, where, however, he was not obliged to reside. He lived sometimes in Florence, and sometimes at the country-seat *Alle Selve*, of his friend Salviati. Here he gained a decisive victory for the Copernican system, in 1610, by the discovery of the varying 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 favor 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 honor 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 general observations on these bodies. His scholar, 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 Copernican system, the second the Ptolemæan, 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 favor of Copernicus. With this immortal work, in which the greatest elegance and accuracy of style is united with the clearest 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 Giornate si discorre de' due massimi 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

* To secure to the Germans the honor of this discovery before the Italians, we only need to compare the date of their works on this subject. The *Narratio de Maculis in Sole observatis* of Fabricius appeared in 1611, at Wittenberg; Scheiner's *Tres Epistolæ de Maculis solaribus*, at Augsburg, in 1612; Galilei's *Istoria e Dimostrationi intorno alle Macchie solari*, first at Rome, in 1613. Lalande relates the history of the contest for priority, in his *Astronomie*, iii, p. 386, 2d edition.

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 feeble 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 compelled to go to Rome in the winter of 1633, 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 sincero et fide non ficta abjuro, maledico et detestor supradictos errores et hereses*, 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* (and yet it moves!) This happened June 23, 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 episcopal palace at Sienna, and, soon 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 eyes, one of which was wholly blind, and the other almost useless, when, in 1637, he discovered the libration (q. v.) of the moon. Blindness, deafness, want of sleep, and pain in his limbs, united to imbitter 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), Jan. 8, aged 78, expiring with a slowly-consuming fever, in the arms of his youngest and most attached scholar, Vincenzo 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, drawing 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 said, "is nature." His style is lively, 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 e Commercio Litterario di Galilei*, 2 vols. (Florence, 1821).

Gall, John Joseph; born, in 1758, in Tiefenbrunn, in the kingdom of Würtemberg, 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. These discoveries were soon widely circulated. 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 20 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, but delivered them verbally, in his travels through the great cities and universities of Germany. He then labored 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 developes itself in the shape of a net, and divides itself into the great and the small brain (*cerebrum* and *cerebellum*). With Spurzheim, Gall published, at 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 Innées de l'Ame et de l'Esprit, ou du Matérialisme*, &c. (Paris, 1812). Spurzheim, of late years, has delivered lectures, in England and Scotland, upon this system. Spurzheim has also published, in London, a work upon his own and Gall's discoveries, which has met with severe criticism. A new edition, in six volumes, of Gall's *Organologie, ou Exposition des Instincts, des Penchans*, &c., *et du Siège de leurs Organs*, was published at Paris, 1823—5. Doctor Gall died in the year 1828.

Gall, in the animal economy; the same with *bile.* (q. v.)

Gall-Bladder, called *vescicula* and *cystis fellia*, is usually of the shape of a pear, or 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 its own color. It is composed of four 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 produce, to perfect it farther, to retain it a certain time, and then to expel it.

Gall, in natural history, denotes any protuberance or tumor 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 color, which, as it grows stronger, becomes black; and on this property depends the art of making our writing ink and 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, extremely hard. All these apparently monstrous 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 color, with black *antennæ*, and chestnut-brown legs and feet. The wings are white. It is small and 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 *diplolepis gallæ tinctoriæ.* 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 air. The oak which bears the gall-nut of commerce (*quercus infectoria*) does not attain a greater height than four or five feet, and usually has very numerous straggling

branches. The leaves are oblong, sinuate, mucronate-dentate, and smooth on both sides. The acorns are elongated, and sessile or subsessile. The galls are hard, woody and heavy, about the size of 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 color. 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 making ink. An infusion is an excellent test of iron. They are imported from Smyrna, Tripoli, and other places in the Levant, especially from Aleppo, to which place they are brought by the Curds (q. v.) 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 *duodenum*, before they are evacuated. Gall-stones 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 Rollot, in Picardy, in 1646. Colbert employed him to travel on the account of government, and his zeal and industry are evinced by several treatises published by him on his return, illustrative 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 *Jeux d'Esprit* to be 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-laboring classes were either clergymen or warriors, and when chivalry (q. v.) fostered alike valor 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 mildest towards the defenceless. But, when 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 more recent times, those 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 length, by which proportion it is distinguished from a saloon. 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 rooms, 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 Οὔριος, (the dispenser of favorable winds); the Diana 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 Simonion; and the famous flute-player Asrandus. It also contained a splendid collection of vases, *pateræ*, &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 splendor 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 ship of war, or of a large merchantman.

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 *galleasses*, were formerly employed by the Venetians. They were about 162 feet long above, and 133 feet by the keel, 32 feet wide, and 23 feet length of stern-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, and are from 120 to 130 feet long, 18 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 labor and are confined.

Galley is also a name given to an open boat, rowing six or eight oars, and used on the river Thames by custom-house officers, press-gangs, and also for pleasure; hence the appellation of *custom-house galley*, *press-galley*, &c.

Galley, 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 merchantmen, it is called the *caboose*.

Galley-Slave; 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 Scheele. 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 80°. A mouldy paste is formed, which is to be squeezed 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 16 ounces of water down to 8, and strain it; dissolve two ounces of alum in water, precipitate the alumina by carbonate 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 acicular crystals.—Gallic acid, when pure, is in whitish crystals, of a sour taste, and which exhale a peculiar smell when heated. It dissolves in about 24 parts of water at 60°, and in 3 parts at 212°. It is also soluble in alcohol and in ether. When repeatedly sublimed, this acid is altered and in part decomposed. It consists, according to Berzelius, of

Hydrogen, ...	5.00
Carbon, ...	56.64
Oxygen, ...	38.36

These proportions give the number 63, as the representative of gallic acid. The combinations of pure gallic acid with metallic bases have scarcely been examined, and consequently we have no 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 potassa or of soda, but when dropped into lime-water, baryta-water, or strontia-water, it occasions the separation of a difficultly-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 infusion is employed as a test for such metals. Of these compounds, the tanno-gallate 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 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 12 or 14 days; then allow the coarser parts to settle, and pour off the ink for use. (See *Ink.*)

Gallican Church; the Catholic church of France, which was always distinguished by its independence of the papal chair. The first foundation of its 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 cleri Gallicani* of 1682. A dispute having arisen between Louis XIV and Innocent XI, 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 abovementioned. 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 laws of the church and general councils, and that the sentence of the pope is not incapable of change (*irreformabile*), 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 Catholic church in general. Previous to the revolution, it was adorned by learned scholars and celebrated preachers—Bossuet, Bourdaloue, Massillon, Fénélon and Flechier. The revolution overthrew the church, stripped the clergy of their estates, and abolished their schools and seminaries. Bonaparte, when first consul of the French republic, restored the church by a concordate (q. v.) 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, by means of the Jesuits and missionaries, 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 epistle against it by the archbishop of Toulouse, count Clermont Tonnère, 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. (See *France, History of.*)

Gallicism; an idiom of the French language, employed in an expression, or in the construction of a sentence belonging 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, agreeably to the customs of the time, frequently repeated the words *gallus Mathiæ* (Matthew's cock); but, getting confounded by the repetition, he used the expression *galli Mathias* (the cock's Matthew). As this signified nothing, any unmeaning, absurd expression was afterwards called *gallimatias.* Perhaps this explanation and etymology is not a bad specimen of *gallimatias.*

Gallinæ, 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 pannel of the saddle, so that the hairy side may be next the horse. When a horse's back is galled 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 mizzen mast, and a large gaff-main-sail. A galliot is a sort of a brigantine, or small galley, built very slightly, and designed only for chase. She can both sail and row, and usually carries about two or three *pedreros*, and has 16 or 20 oars. All the seamen on board are soldiers, and each has a musket by him on quitting his oar. Some also call the bomb-ketches *galliots.*

Gallitzin, Amalia, princess; a 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, Hamann, Jacobi, Göthe, Fürstenberg and others. The two first were 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 *Diotima* to whom Hemsterhuis, under the name of *Dioklas*, addressed his work On Atheism. She died, in 1806, near Munster. Her only son was a missionary in America.

Gallo, Marzio Mastrizzi, marquis of; ambassador of Ferdinand IV, king of the Two Sicilies, at Vienna and other courts, afterwards minister of state, in Naples, under Joseph Bonaparte and Murat. Ferdinand IV employed him in the most difficult negotiations during the wars of the revolution. In 1795, he was appointed prime minister in the room of Acton, but declined the offer. When the king of Naples offered his mediation between France and Austria, in 1797, Gallo attended the conferences at Udino, and, October 17, signed the treaty of Campo-Formio, between Hungary and Bohemia and the French republic. His king again availed himself of his services in 1798, 1799, and 1800, in important negotiations with France. In the interval, he had to sustain a contest with Acton, whose violent measures he opposed. As viceroy of Sicily, he had orders to act only in unison with Acton. About the close of the year 1802, he went, as ambassador of the king of the Two Sicilies, to the Italian republic, and from thence to France. He was present at the coronation of Napoleon, as king of Italy, at Milan, in May, 1805; and, in September of the same year, he signed the treaty with France respecting the evacuation of the Neapolitan territory by the French troops, which was broken, however, at the very moment of signing. Upon the landing of the Russians and English at Naples, he gave in his resignation; but, in January, 1806, immediately after the return of the emperor, he was obliged to quit Paris. When

Joseph Bonaparte ascended the throne of Naples, he was appointed his minister for foreign affairs. He accompanied him to Bayonne in May, 1808. Under Murat, he was also minister for foreign affairs. In that capacity, he signed, in January, 1814, the treaty of alliance with Austria, upon which the hostilities between England and Murat ceased. He afterwards signed a treaty at Naples, with Lord Bentinck. In the distresses which Murat had brought upon himself by his double defection, first from Napoleon and then from Austria, Gallo remained faithful to his king, and served him with zeal. April 18, 1815, he repaired to Ancona, whither Murat soon after retreated. After the revolution of 1820, in Naples, the Neapolitan government appointed him to be minister of foreign affairs, and subsequently ambassador to Vienna, to explain to that court the Neapolitan revolution and its consequences. But he received intimation from prince Metternich, at Klagenfurt, that he should proceed no farther in his journey; that the emperor could grant him no audience, because the Neapolitan revolution had subverted the established order of civil society, and threatened the existing governments and the tranquillity of the other nations. The marquis was therefore obliged to return to Bologna. With some difficulty, he obtained permission to follow the king to Laybach, but he could effect no change in the resolution of the congress respecting Naples. The close of the revolution at Naples restored the marquis to private life.

Gallon; an English measure of capacity, being equal to four quarts, or eight pints.

	Cub. Inches.
The gallon, wine measure, contains	231
ditto, beer measure, ...	282
ditto, dry measure, ...	$268\frac{4}{5}$

Galloon, in commerce; a narrow kind of lace, used to edge or border cloths.

Gally, in printing; a frame into which the compositor empties the lines out of his composing stick, 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*.

Galt, John, was born in 1779, at Greenock, England. He is an author of considerable talent, and has been an extensive traveller. He is the author of Voyages and Travels in 1809, 1810, 1811, containing Statistical, &c. Observations on Gibraltar, Sardinia, Sicily, Malta, Cerigo and Turkey (4to., 1812), the Life and Administration of Cardinal Wolsey (4to., 1812), Reflections on Political and Commercial Subjects (8vo., 1812), Four Tragedies (8vo., 1812), Letters from the Levant (8vo., 1813), the Life and Studies of B. West, Esq. (8vo., 1816), the Majola, a Tale (2 vols., 1816), and Pictures, Historical and Biographical, drawn from English, Scotch and Irish History. Several other works are also attributed to Mr. Galt, as the Annals of the Parish, the Provost, &c., and many essays in Blackwood's Magazine, as well as in the New Edinburgh Review. When the duke of Wellington became premier, Mr. Galt took the editorship of the London Courier. He has lately published a novel called Lawrie Todd; also a Life of Lord Byron.

Galuppi, Baldessaro; a musician, called also *il Buranello*, from Burano, an island near Venice, where he was born in 1703. He studied at the *Conservatorio degli Incurabili*. 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 unfavorably 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 Incurabili*. At the age of 63, he was appointed first chapel-master at St. Petersburg. In 1768, he returned to his family at Venice. He continued his labors 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 50 in number, were almost all of the comic kind.

Galvani, Luigi, 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 favorite 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 of birds; but he afterwards confined himself to an investigation of the organs of hearing. In these pursuits, he was fortuitously 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 Sinigaglia and Rimini, he was so fortunate as to trace the cause of the electric appearances 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 the revolution, 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 observes when in action, 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. This observation related to the muscular contractions that take place in the leg of a frog recently killed, when two metals, such as zinc and silver, one of them touching the crural nerve, and the other the muscles to which it is distributed, are brought into contact with one another. The theory which he invented to account for this phenomenon was, that the different parts of an animal are in opposite states of electricity, 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 their edges are brought into contact, or 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 humid animal fibre; that the animal matter acts merely as a medium conducting this 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 galvanism, Volta showed that plates of different metals, such as silver and zinc, in contact with one another, 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 separated from the adjoining 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 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 tasses.* 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 of 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 galvanic apparatus, and the circumstances essential to the excitement of this modification of electricity;* 2. *its electrical effects;* 3. *its chemical agency;* and 4. *the theory of galvanism.*

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, the mineral acids, and saline solutions; the latter including water, alcohol and ether, sulphur, oils, resins, metallic oxides, and compounds of chlorine. The least 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 tables, some different simple circles are arranged in the order of their powers; the most energetic occupying the highest place.

Table of Electrical Arrangements, which, by Combination, form Voltaic Batteries, composed of two perfect Conductors, and one imperfect Conductor.

Zinc, Iron, Tin, Lead, Copper, Silver, Gold, Platina, Charcoal.	Each of these is the positive pole to all the substances below it, and negative with respect to those above it in the column.	Solution of nitric acid, ——— muriatic acid, ——— sulphuric acid, ——— sal-ammoniac, ——— nitre, ——— other neutral salts.

Table of Electrical Arrangements, consisting of one perfect Conductor and two imperfect Conductors.

Solution of sulphuret of potash, ——— potash, ——— soda.	Copper, Silver, Lead, Tin, Zinc, Other metals, Charcoal.	Nitric acid, Sulphuric acid, Muriatic acid, Any solutions containing acids.

In explanation of these tables, it may be observed, that in all those cases where the fluid menstrua afford oxygen, those metals which have the strongest attraction for oxygen are those which form the positive pole. But when the fluid menstrua afford 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 and iron plates, 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 alkali and sulphur, or of its alkali, 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, oxydizes very slowly; but when placed in the same situation, in contact with a piece of silver, its oxidation is much more rapid. 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 circle. 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 woollen 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 so on, 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 shock 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. Cruickshank—the *galvanic trough*, as it is named; and which consists of a long and narrow trough, made of baked wood. Grooves are cut in the trough, opposite to, and at the distance of ½ and ¾ 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 3 to 6 or 8 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 50 pairs of plates 4 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 Humphrey Davy made his great discoveries, is composed of 2000 pairs of plates, each plate having 32 square inches of surface.—An improvement in the voltaic battery has been made, 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 earthen ware), 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. An ingenious modification of this apparatus has been contrived by doctor 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 pleasure, instantaneously into the exciting fluid contained in glass jars or wooden troughs, without partitions. Each coil is formed from a zinc sheet of 9 inches by 6, and one of copper 14 by 6, 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, 40 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 voltaic 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 6 feet long by 2 feet 8 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 from a wooden beam, by means of which they could at once be lowered into the cells, and again raised, at pleasure. Doctor Hare constructed an apparatus consisting of 20 sheets of copper and the same number of zinc, each 20 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 *calorimotor*. Messrs. Wetherell and Peale, of Philadelphia, experimented with still larger pairs in the form of concentric coils; one pair con-

taining nearly 70 square feet of each metal, and another nearly 100.

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 with which the more oxidable metal is acted upon by 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 in contact with the copper. A saline solution, as of muriate of soda, or muriate of ammonia, is found to cause a more rapid oxydation of the zinc; and, accordingly, the electric power is greater: and, lastly, an acid fluid, which oxygenates 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 20 or 30 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, the different metals constantly alternating with each other in their position, until they attain the height of 18 inches, when they are coated over with a glass cylinder. They are then placed at the distance of 4 or 5 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 connected with the opposite poles, or 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 white light appears at the points of 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, if the galvanic fluid, in its circuit, 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 may 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. Electrical attractions and repulsions take place in the highest degree, when a great number of small plates are employed, and the cells filled with water. For acting on the electrometer, therefore, a battery of numerous small plates is peculiarly suited, and common river water is the best material for its excitation. For producing sparks, or giving shocks, a numerous series of plates, about four inches square, and excited with dilute acid, is required. For burning metallic leaves, fusing wire, and igniting charcoal, a small number of large plates answer better than a great number of small ones; a strong acid solution should also be employed.

3. *Chemical Effects of Galvanism.* The most simple chemical effect of the galvanic battery is the ignition and fusion of metals, which has already been alluded to

above. The facility of being ignited, in the different metals, appears to be inversely proportional to their power of conducting heat. Hence platina, which has the lowest conducting power, is most easily ignited; and silver, which conducts heat with greater facility than any other metal, is ignited with more difficulty than any of the rest. The combustions produced by galvanic arrangements have also been spoken of above. The plates for this purpose should not be less than four inches square, and an aggregate of not less than 150 pairs of plates employed. The metals are burnt, or rather deflagrated, in the form of very thin leaves. Gold emits a very vivid white light, inclining a little to blue; the flame of silver is a vivid green, somewhat like that of emerald, and zinc a bluish white flame, fringed with red. The most striking effect of the voltaic battery, however, is the intense light, which is produced by placing two pieces of charcoal, cut into the shape of pointed pencils, at the two ends of the wires of an interrupted circuit. When the battery is a very powerful one, and the charcoal points are brought within the 30th or 40th of an inch of each other, a bright spark is produced. By withdrawing the points from each other, a constant discharge takes place through the heated air, in a space of from one to four or more inches, according to the energy of the apparatus, producing a most brilliant arch of light, of considerable breadth, and in the form of a double cone. Platina, introduced into this arch, melts as wax does in the flame of a candle. This light equals the brilliancy of the sun, and cannot be borne by eyes of common strength, unless protected by glasses. That it does not arise from combustion, is proved by the fact, that very little of the charcoal is wasted by its continuance for some time. In the use of the deflagrator, it was observed by professor Silliman, that, during the discharge, the charcoal point of the positive pole shot out into a little stalactical knob, in the direction of the opposite point; while, in the charcoal of the negative pole, on the contrary, a crater-shaped cavity was formed at the same time, appearing as if matter was actually transferred from the negative to the positive side. The subsequent examination of the matter thus apparently transferred, as it had all the marks of having been fused, induced the belief that the charcoal passed, in the state of vapor, through the ignited arch of flame, and concreted again on arriving at the positive pole. The most important chemical effect of galvanism, however, is that of producing decomposition. The substance first decomposed by it was water. When two gold or platina wires are connected with the opposite poles of a battery, and their free extremities are plunged into the same cup of water, but without touching each other, hydrogen gas is disengaged at the negative wire, and oxygen at the positive side. By collecting the gases in separate tubes as they are formed, 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 oxidable metal are employed, the hydrogen gas will appear as usual, but the oxygen, instead of escaping, combines with the metal, converting it into an oxide. Numerous 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, alkalies and earths go to the negative side, while oxygen and acids go more to the positive 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 amianthus. 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 wire is immersed? The only explanation 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 amianthus 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 which the positive pole communicates, and all the base in the other; each being conveyed by the medium of the moistened amianthus, 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 saline solution be placed in one of the 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 amianthus 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 had passed in the former experiment, and to return to the first cup, while the base will move in an opposite direction, till all of it is collected in the vessel in which the negative wire was placed. Phenomena still more extraordinary present themselves in connexion with these most interesting researches. The elements of compound bodies are actually 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 colored infusions, which are instantly reddened by the presence of an acid, without occasioning the slightest change of color. The same happens also with alkalies. Sir H. Davy found that when three vessels were connected with each other by moistened amianthus, 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 barytes or strontites; 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 around 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 ap-

parent. Grotthus, in explaining the galvanic decomposition of water, advanced the conjecture, that as, in the voltaic pile, each pair of plates has 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; and 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 particle at each wire may be 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 favor of this supposition. In atmospheric air, bodies rendered positively or negatively 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 substances are subverted by the galvanic influence, 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 exalted 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 cause be united together. 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 called decomposition from elective affinity. The effect of heat, likewise, in promoting combination or decomposition, may often depend on its exciting electrical energy; and the elevation of temperature and production of light, so frequently attending chemical action, may depend on the changes attending the electrical states, since such changes are accompanied with the evolution of heat and light. The agency of the galvanic apparatus, then, in producing decomposition, it is conceived on this hypothesis, is, that the two wires placed in contact with the compound, are, in states of electricity, more intensely exalted than the natural states of the two ingredients; hence the attraction of these two highly electrified points overcomes that subsisting between these ingredients: they are separated, and immediately drawn to the respective poles,—the positive constituent to the negative wire, and the ingredient which is naturally negative, to the positive wire.

A number of facts are brought forward in support of these views. Thus, when dry acids, such as the oxalic and boracic, are touched with an insulated plate of copper, the electric equilibrium is immediately disturbed; the acids are found, after the contact, to be in the negative state of electricity, and the metal to be positive. Here then it was supposed, that their natural states are manifested, such as they are, inherently, at all times. Again, when the same plate is applied to earthy and alkaline substances, the opposite appearance is presented; the metal becomes negative, and the latter bodies positive. And lastly, when acids are brought in contact directly with earthy and alkaline substances, the same relative states are exhibited—the former become negative, and the latter positive. To these speculations, however, it has been objected, that there is not the slightest evidence that bodies are naturally in particular electric states. That they become either positive or negative when submitted to certain operations, is no proof that they exist originally in one condition more than another. Since the tendency, also, always is to an electric equilibrium, if two substances were naturally in opposite states, and were, by the electric attraction, brought into combination, as soon as they united, the opposition of states would cease, an equilibrium would result, and no attractive force would remain to keep them in union. It has also been shown, in opposition to this hypothesis, that bodies in opposite states of electricity, do not combine when presented to each other, and that bodies in similar states combine with as much force as if in dissimilar states. The theory, therefore, does not yet stand on so firm a basis as to induce chemists to abandon the nomenclature they have hitherto employed, and cease to regard affinity as a distinct species of attraction. But at the same time it must be admitted, that the electro-chemical theory is founded on extensive observation and numerous facts, and has proved, in the hands of its distinguished author, a safe guide to some of the most famous discoveries ever made in chemistry. Regarding all compounds as constituted of oppositely electrical elements, sir H. Davy conceived that none of them should resist decomposition, if exposed to a battery of sufficient intensity; and he accordingly subjected to galvanic action substances which till then had been regarded as simple, expecting that if they were compound, they would be resolved into their elements. The alkalies and earths were in this manner successively decomposed; a substance, with the aspect and properties of a metal, appeared at the negative pole, while oxygen gas was disengaged at the positive surface. Another instance of the successful application of these views is seen in the attempts of sir H. Davy to protect the copper sheathings of ships from corrosion. It is well known that the copper sheathing of vessels oxidizes very rapidly in sea water, and, consequently, wastes with such rapidity as to require 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 oxidize, 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 40 or 50 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 iron or the zinc was slowly corroded. 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, accordingly as 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 electrics 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.

1. *Negative Electrics.*	2. *Positive Electrics.*
Oxygen.	Potassium.
Sulphur.	Sodium.
Nitrogen.	Lithium.
Chlorine.	Barium.
Iodine.	Strontium.
Fluorine.	Calcium.
Phosphorus.	Magnesium.
Selenium.	Beryllium.
Arsenic.	Yttrium.
Chromium.	Aluminium.
Molybdenum.	Zirconium.
Tungsten.	Manganese.
Boron.	Zinc.
Carbon.	Cadmium.
Antimony.	Iron.
Tellurium.	Nickel.
Columbium.	Cobalt.
Titanium.	Cerium.
Silicon.	Lead.
Osmium.	Tin.
Hydrogen.	Bismuth.
	Uranium.
	Copper.
	Silver.
	Mercury.
	Palladium.
	Platina.
	Rhodium.
	Iridium.
	Gold.

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 deflagrate 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, the result would have been that the burning effect would have been diminished, while it would have exhibited more evidently the different electrical states, and been more powerful in exciting sensations in animal organs, and in giving rise to 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 disturbs 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,—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 action whatever 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 powers of the metals, and the chemical action 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 the 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 energetic action. For this effect 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, than it is again disturbed; and when, by a continuance of the 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 developement 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 opinion that all bodies are naturally, whether combined or insulated, in peculiar electric states, is a mere assumption. (For the effects of galvanism on the magnet, see *Electro-Magnetism.*)

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 laid the foundation of 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, John II. By his command, 4 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 went on board 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 Gonzalo Nuñez. November 20, 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 harbor of Mozambique, where his crew were in great danger, on account of the hostility of the inhabitants to Christians. His guns saved him. In Mombaza, 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) at Calicut, a city inhabited by Hindoos, where the ruler over the country, called the *zamorin* (i. e., chief king or emperor), had his residence. Gama, on his arrival, was favorably 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 harbor 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 55 returned with him. After his arrival in the capital, 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 honor of him. Emanuel bestowed rewards upon all the companions 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. Some time after, 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 13 sail to the Indies, under the command of Pedro Alvarez Cabral. Alliances and commercial treaties were concluded with the Indian princes, and Cabral's squadron, as well as a lesser one under the command of Juan Coelho, returned to Portugal with rich cargoes. The greatest zeal for engaging in the commerce with the Indies was kindled among all classes of the nation, and the harbor 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 20 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 Cananor and Cochim, which had been concluded by Cabral. Both kings were enemies of the zamorin, who, since Gama's first voyage, had treated the Europeans in a hostile manner; 40 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 peaceable proposals of the terrified king, made an attack on the ships that lay in the harbor, and ordered the city to be bombarded. His cannon carried terror and destruction into the city. At the same time, he hung up 30 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 Cochim, where he received a deputation from the Christians of St. Thomas, so called (see *Christians of St. Thomas*), who lived in the neighborhood, and solicited his protection against the pagans. A bramin 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 Cochim, and, after having established a factory there, sailed, with ten ships, to Cananor. Here he was attacked by the squadron of the king of Calicut, consisting of 29 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 Portu-

guese, there was a gold idol of a monstrous figure, weighing more than 30 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 Belem (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. Francis de Almeida and the great Albuquerque had gloriously confirmed the power of Portugal in India, when Gama was sent for 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 harbor of Lisbon, with 14 vessels. Immediately after his arrival, he visited several small colonies, 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, when, amidst the victories of his squadrons, he sunk under the infirmities of age, and died, Dec. 24, 1524, at Goa.

Gambia, or Gambria, or Gamba (anciently *Stachir*); a river in Western Africa, which rises from the mountains on the borders of Foota Jalloo, and flows westerly into the Atlantic, about lon. 16° 30′ W., lat. 13° 30′ N. It is navigable to Barraconda, about 400 miles. In the higher part of its course, it is called by the natives *Ba Deema*. It annually overflows its banks. The territory along its banks is divided among a multitude of petty sovereignties, the most considerable of which is Boor Salum. The northern side is inhabited chiefly by the Jaloffs and Mandingoes; the southern by the Feloops. The commerce of the Gambia is chiefly in the hands of the English, who have erected James Fort near its mouth, and formed the settlement of Bathurst.

Gamboge is a gum-resin, said to be the product of the *garcinia gambogia*, a large tree, nearly related to the celebrated mangostan, inhabiting India, Ceylon, Siam, Cochin-China, and Cambodia. The leaves are opposite, glabrous, oval and acute; the flowers few and terminal, of a yellowish color; the calyx consists of four leaves, and the corolla of four petals; the stigma has eight lobes, and the stamens are numerous; the fruit is about the size of an orange, and has a slightly acid taste. Gamboge is said to be the inspissated juice of this tree, and is obtained in commerce in masses of a dull orange color, with a conchoidal fracture, possessing no smell, but an acrid taste, which is very slowly developed. When ignited, it melts, throwing out a dense smoke with sparks; is soluble, or, more properly, diffusible in water, affording a beautiful color, very much employed by painters; is also used to stain wood in imitation of box; and the tincture enters into the composition of the gold-colored varnish, with which manufactures of brass are overlaid. It is said to give also a beautiful and durable yellow stain to marble. Its medical properties are violently purgative.

Game, in general, signifies any diversion or sport performed with regularity, or restrained by rules. Games are usually distinguished into those of address and those of hazard. To the first belong chess, tennis, billiards, wrestling, &c.; and to the latter, those performed with cards or dice, as backgammon, ombre, picquet, whist, &c. (q. v.) (See also *Sports*.)

Game Laws. The game laws of England prohibit persons not having certain qualifications from killing certain kinds of game, and all persons from killing such game at certain seasons of the year. The laws limiting the privilege of killing game to qualified persons are relics of the ancient forest laws, which made it as great an offence to kill one of the king's deer as to kill one of his subjects. These laws are justified upon the assumption, that beasts of the chase and game are a sort of unappropriated chattels, and so belong to the king; and, accordingly, it is no infringement of the right of any of his subjects to grant the privilege of killing them to any persons, with the exclusion of others, any more than to grant an exclusive right to a piece of unowned land to one man is an infringement of the right of another. But this mode of reasoning 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 of civil policy, and of economical utility; and it is by no means a satisfactory reason for continuing a privilege to some, and continuing to deprive others of it, that, from time immemorial, the distinction has been made. One

ostensible reason in favor of these laws is the preservation of game. This object could, however, 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 U. States. Thus, in Massachusetts, 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 place, 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. I; killing conies in the night, or attempting to kill them, is punished by a fine of 10 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 Jac. I, c. 13; selling such engines, by a fine of 40 shillings, under 3 Jac. I, 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, Nemæan, &c. games; and among the Romans, the Apollinarian, Circensian, Capitoline, &c. games. The Romans had three sorts of games, viz. sacred, honorary, and ludicrous. The first were instituted in honor of some deity or hero; of which kind were those already mentioned, together with the *Augustales*, *Romani*, *Palatini*, &c. The second were those exhibited by private persons to please the people; as, the combats of gladiators, the scenic games, and other amphitheatrical sports. The ludicrous games were much of the same nature with the games of exercise and hazard among us; such were the *ludus Trojanus*, *tesseræ*, *tali*, *trochus*, &c. (See *Olympic*, *Pythian*, *Nemæan*, &c. *Games*; also, *Circus*, *Games of the*.)

Gaming. (See *Sports, unlawful*.)

Gamla; a Swedish word, which appears in several geographical names, signifying *ancient*, as *Gamla Carleby*, Ancient Caroline.

Gammut. The name given to the table or 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 proslambanomenos, 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 consisted of 20 notes, viz., two octaves and a major-sixth. The first octave was distinguished by capital letters, as G, A, B, &c.; the second by small letters, as g, a, b, &c., and the supernumerary sixth by double letters, as gg, aa, bb, &c. By the word *gammut*, we now generally understand the whole present existing scale; and to learn the names and situations of its different notes, is to learn the gammut. It, however, sometimes simply signifies the 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.

Ganganelli. (See *Clement XIV*.)

Gang Board; a plank or board, with several cleats 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 rises from the south side of the Himmala mountains, between lon. 78° and 79° E.; lat. 31° and 32° N. After flowing through Serinagur, it is joined, in lat. 30° 9′ N., by the Alacananda. Pursuing a course of 30 or 40 miles farther, 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 ablution. It afterwards receives the Goomty, Gogra, Soane, Bagmutty, Gunduck, Coosy, Teesta, and numerous smaller rivers. It di-

vides 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 22° 30′ N. The main branch receives the great river Barrampooter about 40 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 60 feet deep in the rainy season, and 30 feet deep in the dry. Its descent is computed at 4 inches per mile; its motion in the dry season less than 3 miles an hour; in the wet season, 5 or 6, and in particular circumstances and situations, 7 or 8. It is supposed to discharge, on an average, throughout the year, 180,000 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 *Hoogly*, which is formed by the Cossimbazar and Jellinghy, 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 Brama, and that it possesses great miraculous powers on account 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 carry him to the bank of the Ganges, in 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, therefore, a considerable article of commerce in India. It is also customary, after the dead have been burned, 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 for swearing Hindoos, as the Bible is for Christians. (See *Asia*, and *Hindostan*.)

Gangrene is a great and dangerous degree of inflammation, wherein the parts begin to be 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 *gang-board*.

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 railed accommodation ladder, 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 seizing 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 color. The bill is six inches long, and furnished beneath with a kind of pouch, like that of the pelicans, with which birds the gannet was classed by Linnæus. 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 high rocks on uninhabited islands, and are found in immense numbers in the Orkneys, and on Bass island, near Edinburgh. These dreary precipices 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 breeding places, appear to a person at some distance like a swarm of bees; and when he approaches the foot of the rocks, the air is immediately darkened with the vast flocks that rise from their nests. These nests are generally formed of sea-weed. The female lays only one egg, though, if it be removed, she will deposit another. The young are 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 attended with great danger. The persons employed in it are let down by a rope from the top of the precipices, and thus hang 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 dislodgment of the loose stones. 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 (vulgarly 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 forward between the two rows of men on one 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 handled 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.

Ganymede; great grandson of Dardanus, who founded the city of Troy, son of Tros and of Callirrhoe, 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, masterworks of ancient art, have descended 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, Sclavonic and Persian languages, meaning a fortified place, and appearing in many geographical names, as *Kashgar*, place of the mountains, *Stargard* (a German place), old city. The Russian *gorod*, the end of many geographical names, is of the same origin. So are *hrad* and *grad*.

Garat;—1. Dominique Joseph, count; born in 1760. While a private scholar, he made himself very advantageously known by a eulogy on De l'Hôpital. He then became a member of the constituent assembly; after the dissolution of which, he was carried along in the revolutionary torrent. He sustained numerous important offices. In the year 1792, he was minister of justice; it therefore fell to his lot to announce his sentence to Louis XVI. In the reign of Napoleon, he was a member of the senate. Louis XVIII gave him no appointment; and, when the national institute, of which he had been a member, was newly organized, he was

left out. In 1820 appeared his *Mémoires sur la Vie de M. Suard et sur le XVIII Siècle.* —2. Pierre Jean; by birth a Gascon, and nephew of the preceding; a celebrated singer, and one of the most distinguished professors in the musical conservatory in Paris. The voice of Garat was, in tone and compass, very remarkable, and his facility was admirable. His execution of the music of Gluck was particularly esteemed. He died March 2, 1823.

Garcia, Madame. (See *Malibran.*)

Garcilaso de la Vega (properly *Garcias Laso de la Vega*), called the *prince of Spanish poets*, was born at Toledo, in the year 1503. 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*, the Garcilasos received their surname from their combats with Moorish 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 had already begun to transplant the versification of 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 his own works. He lived for a long 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 1535, 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 30 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 33 years. His body was brought to Toledo, in 1538, and placed in the tomb of his family. When we consider his early death, and his active and troubled life, we are astonished at the perfection of his poems. Spanish poetry is highly indebted to him; for without his aid, Boscan, a foreigner, would never have succeeded in his innovations, more particularly as he had a formidable adversary in Christoval de Castillejo. Boscan was so grateful for the assistance, that he collected the works of his friend with the greatest care. They consist of eclogues, epistles, odes, songs, sonnets (in which he imitated Petrarch), and some smaller poems. An edition of his works, with notes, appeared at Madrid, in 1765, and Herrera's commentary (Seville, 1580), with notes by Azara (Madrid, 1765, 4to.). We must not confound with him the Inca, Garcilaso de la Vega, of Cusco in America (born in 1540, died in 1620), the author of the *Historia de las Antiguedades y Conquista del Perù* (Lisbon, 1609, fol., and Madrid, 1722, 2 vols. fol.), and *La Florida* (Lisbon, 1605, 4to., and Madrid, 1723, fol.).

Gard; a department of France. (See *Department.*)

Gard, Pont du; a Roman aqueduct, France, in Gard, 10 miles from Nismes, 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 872 at the top. The grandeur and simplicity of this monument excite the admiration of every traveller.

Garden, Alexander, an eminent botanist and zoologist, 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 Linnæus, in 1755. Soon after, he obtained the *Philosophia Botanica*, the *Systema Naturæ*, and some other works of the Swedish botanist, which greatly assisted him in his inquiries. His labors 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 Linnæus was indebted, particularly, for a knowledge of the insects 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 20 years in America, doctor Garden returned to England, in consequence of the political commotions which preceded the American war. He

was elected a fellow of the royal society in 1773, but was not admitted until 10 years after. From that period, he resided in London, where he died April 15, 1791. Doctor Garden published An Account of the *Gymnotus Electricus*, or Electrical Eel, in the Philosophical Transactions, and some other detached papers, but produced no separate work.

GARDENING. Herder, in his *Kalligone*, 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 developes and disposes to the best advantage the beauties of nature—if 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. Scaffoldings, 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 Alcinoüs (*Odyssey*, vii, 112—132) were nothing but well laid out fruit orchards and vineyards, with some flowers. The grotto of Calypso (*Odyssey*, v, 63—73) 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 Alcinoüs. 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. The true art of gardening is probably 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 grottos of the ancients owed their origin merely to the desire for the coolness they afforded. Natural grottoes led 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. In Pliny's description of his Tuscan villa, 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, was as tasteless as possible. 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, seem 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 turned towards pleasure gardens, some of which were so famous, that drawings were made of them. 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 gardener. 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, haystacks, 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, architecture 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, lashed its petty, cramped and unnatural 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 grottoes; moist walks; noisome pools, which were meant to represent lakes; houses, huts, castles, convents, hermitages, ruins, decaying trees, heaps of stones;—a pattern card of every thing strange, from all nations under heaven, was exhibited in such a garden. Stables took the shape of palaces, kennels of Gothic temples, &c.; and this was called nature! The folly of this was soon felt, and a chaster style took its place. At this point we have now arrived. 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 and little songs, all may be equally beautiful and perfect, 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. Aikin justly observes, that nothing deviates more from nature, than the imitation of her grand works in miniature. All deception 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 its highest aim 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. Tieck, in his *Phantasien*, 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, 1808 to 1814), the most complete for descriptions; Loudon's Encyclopædia of Gardening, 5th edit. (London, 1827); *Handbuch der schönen 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 still of considerable use; *Le bon Jardinier, Almanach pour l'Année* 1830, edited by A. Poiteau (Paris), 1022 pages. (See the article *Horticulture.*)

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 Salis

bury, was born in 1483, at St. Edmund's Bury, Suffolk, 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 favor of his master, and consequently, in that of the court. In 1527, he was intrusted with the negotiations 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 archdeaconries of Norwich and Leicester, in succession, and the appointment of secretary of state. His 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 himself head of the church, he was supported by Gardiner, newly created bishop of Winchester. The bishop continued to enjoy the court favor 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 reëstablish herself in the king's favor, and to bring him into disgrace with Henry. With his successor, he stood in a still more unfavorable 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 favor, 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, 1555. A treatise, entitled Necessary Doctrine of a Christian Man, printed in 1543, is said to be the joint work of Gardiner and Cranmer.

Gardiner, James, was born in 1688, at Carriden, Linlithgowshire, and entered the army at the age of 14. On the breaking out of the Scottish rebellion of 1745, Gardiner commanded a regiment of dragoons, and fell at Preston Pans. 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 supernatural intimation of his own approaching death.

Gar Fish (*esox belone*, Lin.). This fish is known under the name of *sea-needle*, and makes its appearance on the English coast in summer, a short time previous to the arrival of the mackerel, which it much resembles in taste. It is long and slender, flattened a little towards the belly, and quadrangular towards the tail. The head is flat, projecting forward into a very long, sharp snout. The sides and belly are of a bright silvery color; the back is green, marked along the middle with a dark purple line; the sides are also each distinguished by a line running from the gills to the tail. The lower jaw projects considerably beyond the upper, and terminates in a soft substance.

Gargara; the highest mountain of the ridge of Ida, in Natolia, near the gulf of Adramyti, on the N. Gargara, like Ætna, is characterized by a triple zone; first a district of cultivated land, afterwards an assemblage of forests, and lastly, towards the summit, a region of snow and ice. Its modern name is *Kasdagh*.

Garlic (*allium sativum*) is a species of onion, cultivated in Europe since the year 1551. The leaves are grass-like, and differ from those of the common onion in not being fistulous. 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 tricuspidate stamens; the root is a compound bulb, consisting of several smaller bulbs, commonly denominated *cloves*, enveloped by a common membrane. Garlic has a strong, penetrating odor, 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 considerable less acrimony than in cold ones, it is much used, both as a seasoning and as a food. When

bruised and applied to the skin, it causes inflammation, and raises 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; and it is every where prized by epicures. 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. In the Middle States, it acquires its full size about the latter end of August. 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. Snails, worms, and the grubs or larvæ 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.

Garnerin (the brothers). The elder, Jean Baptiste Olivier, before the revolution, held an office in the *bureau des fermes*, afterwards in one of the *bureaus* of the national convention, and, in the trial of the queen, appeared as a witness against her. He was afterwards *illuminateur* in the palace of the ex-queen Hortensia, and in that of Joseph Bonaparte. In September, 1815, in company with Robertson, he superintended the experiments made with the parachute. September 21, his daughter Elisa, then at the age of 24 years, descended in the presence of the king of Prussia, by means of the parachute, from a height of 1800 fathoms; a second time, March 24, 1816, and since repeatedly. The younger brother, André Jacques, is, after Blanchard, the most experienced aëronaut. He is the inventor of the parachute, with which he made the first experiment in Paris, in June, 1799, and which he afterwards exhibited before the court of St. Petersburg, in 1800. Lenormand and others have also made experiments with the parachute. His brother claimed the honor of this invention, but he opposed these pretensions in a memoir, published November, 1815.

Garnet; one of the most beautiful species in mineralogy, whether we consider the perfection of its crystallizations, its varieties of colors, 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 planes, which, when produced so as to obliterate the primary faces, convert the crystal into the trapezohedron, 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 quartz. Its structure is seldom distinctly foliated. 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 color 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 blowpipe into a dull, black enamel, 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 and specific gravity are wider than we are accustomed to observe in one and the same species. A variety of distinctions among the contents of the species have arisen out of accidental circumstances, for the most part; yet, as they are in common use, they require to be hinted at here. *Grossular* is of a gooseberry-green color, and crystallized in the ordinary forms of the species; it occurs in Siberia. *Pyreneite* occurs in small blackish crystals, imbedded in a dark-colored limestone, and hitherto found in the French Pyrenees. *Melanite* is of a perfectly black color, and generally crystallized in dodecahedrons, with their edges truncated. It is found in a volcanic rock near Vesuvius, but in the

most beautiful groups near the Franklin furnace in Hamburg, New York, in a white limestone rock. *Pyrope* occurs only in grains, and is remarkably distinct by its pure translucency and blood-red color. It is found in Bohemia and some other countries, in alluvial deposits, accompanied by hyacinths and sapphires. *Precious Garnet* is always red, and its crystals are found imbedded in various forms. Its most remarkable localities in the U. States, are Hanover, New Hampshire, where it occurs in very perfect dodecahedral crystals, in hornblende gneiss; Haddam, Connecticut, where it accompanies chrysoberyl in granite; and Franconia, New Hampshire, where it is found along with magnetic iron ore. Precious garnet is found in foliated masses in Greenland, of a deep blood-red color, and also occurs at Fahlun in Sweden, in very large, but not transparent crystals, often covered with a coat of chlorite. Fine specimens are found in Ceylon, Pegu, Brazil and Bohemia; indeed, it occurs in most countries. It is translucent, and often transparent, but frequently impure at the centre. This variety is found both in primitive and secondary rocks, and sometimes in alluvial earths. The term *Oriental*, sometimes applied to this variety, indicates not a locality, but merely a great degree of perfection. The precious garnet, and the species called *pyrope*, are employed in jewelry, for broaches, ringstones, necklaces, &c. The carbuncle of the ancients was probably a garnet. According to Pliny, it was sometimes formed into vessels capable of containing nearly a pint. In the national museum at Paris is a head of Louis XIII, engraved on a garnet. *Common garnet* seldom occurs in red colors, and these are of dirty shades. Its crystals are generally implanted. Its localities are too numerous to be enumerated. *Colophonite* is a compound variety of yellowish brown and reddish brown, or honey-yellow colors, consisting of roundish particles, of such a composition as to be easily separated. It occurs in great quantity at Willsborough, New York, in a vein traversing gneiss, where its colors are remarkably rich; also, mingled with granular augite, at Rogers' rock, upon lake George. It is likewise found in Sweden. When the particles of garnet become impalpable, the variety called *allochroite*, is formed. *Aplome* is of a deep brown or orange color, and is crystallized in dodecahedrons with the acute solid angles truncated. It is found in Siberia. *Essonite*, or *cinnamon stone*, is of a color varying from hyacinth-red to orange-yellow. 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 crystallized 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:

	Granular.	*Melanite.*	*Precious G.*	*Colophonite.*	*Pyrope.*	*Essonite.*
Silica,	44.00	35.50	35.75	37.00	40.00	38.00
Alumina,	8.50	6.00	27.25	13.50	28.50	21.20
Lime,	33.50	32.50		29.00	3.50	31.25
Ox. of Iron,	12.00	24.25	36.00	7.50	16.50	6.50
Ox. of Manga.		.40	.25	4.75	.25	

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 *Benvenuto Tisi da Garofalo*); a historical painter, born at Ferrara, 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, who often made use of his assistance. He afterwards painted for Alfonso I, in his native city, where he died in 1559; he had been blind for several years. Garofalo's works show the influence of all the schools, particularly of the Lombard, and still more so of Raphael's, whom he surpassed in coloring. From Raphael he had received, says Frederic Schlegel, a certain charming clearness, an expression of grace, and a 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.

GARONNE (anciently *Garumna*); a river in France, which rises in the Pyrenees, and, joining with the Dordogne, about 12 miles below Bordeaux, changes its name to *Gironde*. It is upwards of 400 miles long, and navigable from Muret. By means of this river and the canal of Languedoc, a navigation is opened between the Mediterranean and the Atlantic.

GARONNE, 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 a captain in the army. He was educated at the grammar school of Lichfield, but was more distinguished for his sprightliness than attachment to literature; and he gave an early proof of his dramatic tendency, by inducing his school fellows to act the Recruiting Officer, in which he himself took the part of serjeant Kite, being then only 12 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 Lichfield, 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 (1736), 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 £1000 by his uncle, he joined his brother, Peter Garrick, in the wine trade. This connexion was soon dissolved, and, in 1741, he gave way to his inclination, by joining Giffard's company at Ipswich, where, under the name of Lyddal, he played a great variety of parts with uniform success. At this time, the stages of the metropolis were but indifferently 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 a 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 declamation 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 reduced Drury-lane 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 comparative revival of Shakspeare, and a reform both in the conduct and license of the drama, which is very honorable 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, too hasty in his intercourse with authors, 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, Lethe, 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 three days at Stratford, and its representation at the theatre lasted for 92 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 £37,000. 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 an actor, Garrick has rarely 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, sentimental and poetical declamation. As a man, 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 endeavoring 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 the pieces already mentioned, he wrote some epigrams, a great number of prologues and epilogues, and a few dramatic interludes, and 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 Viegel, under which appellation she attracted the notice of the empress queen, Maria Theresa, as a dancer, and, by her command, changed it to that of Violette, a translation of the German word *vielge*, the anagram of her name. In 1744, she arrived in England, bringing with her a recommendation from the countess of Stahremberg to the countess of Burlington, who received her, on her obtaining an engagement at the opera, as an inmate of Burlington house, and ever after treated her with maternal affection. While under the protection of this noble family, mademoiselle Violette married Garrick, in June, 1749. 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. 16, 1822.

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 force 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, 5 or 600 men; for every hornwork, or other large outwork, 600 more; for every detached redoubt, 150 men; for every detached fort, 6 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 26 knights companions, generally princes and peers, whereof the king of England is the sovereign or chief. The number was increased to 32 in 1786. 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 hereof). 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 (III) 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 favor by accident; upon which he called out, *Honi soit qui mal y pense.* Other accounts, equally uncertain, are given.

Garth, Samuel, a physician and poet, was descended from a respectable family in Yorkshire. He received his academical 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 soon attained 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 admired. In 1710, he addressed a copy of verses to lord Godolphin, on his dismissal, and displayed his attachment to the house of Hanover by an elegant Latin dedication of an intended version of Lucretius to the elector, afterwards George I. On the accession of the latter, he received the honor of knighthood, and was appointed physician in ordinary to the king, and physician-general to the army. 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 latitudinarian 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 *Garonne.* (q. v.)

Garve, Christian; an estimable philosopher and writer of the last century, born at Breslau, 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), Garve became professor extraordinary in the philosophical faculty at Leipsic, 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, Breslau, 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 1792, 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. Garve 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 aëriform substance. Gas is distinguished from steam, or vapor, by this circumstance, that vapors 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 existed at least as great differences among aëriform 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 aëriform 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 or peculiar characters, derived from the substance 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 with the application of heat, and are 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 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 constituted by a mixture of several gases and of watery vapor. This is very simply and evidently ascertained in the following manner:—If a quantity of common atmospheric air is enclosed in an inverted glass over mercury, and burning phosphorus is introduced into it, and its introduction repeated, till it ceases to burn, it is found, upon measurement, that the portion of air enclosed in the glass is diminished 21 parts in the hundred, while 79 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 21 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 fame), was named *oxygen*, from its being found to enter into the composition of all acids then known. The remaining 79 parts consist of another peculiar gas, called *azote*, or *nitrogen* gas. Combustion, with 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 atmospherical 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, although necessary to the support of animal life, will destroy it in time, if respired 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 oxyde gas. This peculiarly exhilarating substance is one of the compounds of azote with oxygen, and is one of the most singular substances in nature. 3. If the vapor, 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 end of the tube is collected, we obtain another species of gas, which is called *hydrogen*, which is inflammable, of an offensive odor, 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 water by 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 15 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 carbon is burnt in oxygen gas, the gas does not appear to diminish in quantity, but it presents a set of entire 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 open jar, and poured from one vessel to another. From this property, it also sinks always 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 brewer's 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 shops. Thus, by a singular coincidence, does the same gas afford 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-lighting is the application of the different forms of hydrogen gas to the lighting of streets and buildings. It was some time since pointed out by chemists,

that there was a great waste of hydrogen gas in almost all cases of combustion, which might, with profit, be accumulated and made use of. The first ideas upon the subject were thrown out by Lampadius, in the first volume of his Art of Mining (*Hüttenkunde*), Göttingen, 1801. He was followed by Lebon, in France, the inventor of the thermolampe. The gas for the supply of this lamp was procured from the combustion of wood; but, as a great quantity of wood was required to keep the lamp burning, this experiment of Lebon led to no important results. In 1810 and 1811, the English began to apply the gas obtained from the burning of coal to this purpose, and brought the lighting of streets and manufactories, by means of this gas, to perfection. The great superiority of the English process over that of Lampadius and Lebon, consisted in this, that the gas was accumulated in large vessels before it was burnt, and thus could be preserved in the gasometers till it was needed, while they were obliged to consume theirs as fast as it was produced. And this mode of lighting was, moreover, profitable only where bituminous coal could be obtained at a moderate price. In 1815, many streets and buildings in all parts of London, and other English towns and cities, were lighted in this manner. In 1817, it was made use of at the polytechnic institute at Vienna, and, in 1818, experiments were made preparatory to the lighting of Vienna. The mode of preparing the gas is as follows: large, tight, iron vessels, three-quarters filled with coal, are heated in furnaces to a red heat; to the end or open mouth of the vessels containing the coal are tightly fitted iron tubes, which convey the substances (gas, water, ammonia, tar) produced by the combustion of the coal to reservoirs, in which they become separated, the tar and water being condensed, while the gas passes on to other vessels, in which the preparation is completed. It is passed through pure water, and through lime-water, by which it is washed and cleansed of its impurities, into the gasometer, in which it remains till wanted for use. This instrument consists of two parts, a large wooden or iron cistern, open above, partly filled with water, and a large open vessel of iron, or some other substance, which is inverted in the water contained in the other, and is suspended and balanced by weights playing over pulleys. Then, as the gas is allowed to enter at the bottom of the cistern, it rises up into, and thus pushes up, the inverted vessel, or gasholder, till it is filled. From this it is let out through tubes provided with stop-cocks. As soon as the cocks are opened, the weight of the gasholder, tending to sink it in the water, forces out the gas it contains. It is then transmitted through small iron or leaden tubes to any part where it is needed. These tubes are laid under the ground, like aqueduct logs, and are thus protected from injury, while the small branches from them, for street or house lamps, are passed through hollow posts, or openings in the walls of the buildings in which they are to be used. The light furnished by them is, beyond doubt, the purest and brightest, as well as least offensive, of any, if we except the Argand lamps alone. Its advantages are particularly felt in places where many lights are wanted in a small space, and for street lights. (See Accum upon Gas-Lights.) Messrs. Taylor and Martineau have, within a few years, invented an apparatus in London, for the production of oil-gas, which has been applied with much advantage for the purposes of lighting; the whole process is simple, and the gas has been applied to use in many buildings, as the apothecaries' hall, Whitbread's brewery, &c. A Mr. Patterson has discovered a method of enclosing the gas in air-tight bags, and thus of transporting any quantity, however small. If, now, a gasholder could be provided for every lamp, as in street-lighting, and this be daily filled, the great difficulty would be removed, which prevents the general introduction of this noble mode of lighting buildings, which is the costliness of the first placing, and of keeping in repair, the metallic pipes which conduct it, in the present mode of using it.—Since the above was written, we learn from Edinburgh, that lamps of the kind proposed above are now getting into use. They are of wrought iron, and the gas costs a farthing per square foot. A lamp of 20 cubic feet will give as much light as two candles, during five or six hours every evening, for a week. These lamps are also very useful as a substitute for a fire; water may be boiled, a steak broiled, &c., by the flame. They will, no doubt, become quite common, being brought to the house as easily as beer barrels, and possessing the additional recommendation of being cheap, and in the highest degree convenient.

Gascony; before the revolution, 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 Guienne 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 sail-yards of a ship, and used to furl or tie up the sail firmly to the yard by wrapping it round both.

Gassendi, Peter, an eminent philosopher and mathematician, was born in the year 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 19, 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 Paradoxicæ adversus Aristotelem*, 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 indolence of Epicurus in a sense the most favorable to morality. He was appointed lecturer on mathematics in the *collége-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 Müller). He also resumed his astronomical labors 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 63d year of his age. He is ranked by Barrow among the most eminent mathematicians of the age, and mentioned with Galileo, Gilbert, 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 the former left behind him, and the treatises 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 vols., at Florence, in 1728. They consist of the philosophy of Epicurus; the author's own philosophy; the lives of Epicurus, Peiresc, Müller, 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 1488, son of John de Foix, count d'Estampes, and Mary of Orleans, sister of Louis XII, was the favorite 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 23, 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 γαστηρ, 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 uniting to 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, a sense of weight and oppression in the belly, looseness or costiveness, &c. From the close connexion of the organs of digestion with the other parts of the body, gastric disorders are often combined with others; e. g., with fever. (See *Dyspepsia*, and *Digestion*.)

Gastromantia (from γαστηρ, 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 a divinity, and proposed to him the question which they wished to have solved. Then a chaste and undefiled boy, or a pregnant woman, was to notice with care all the changes that took place in the vessels, and at the same time to wish, to implore, 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 the most gross and luxurious, as that of the French is the most refined and delicate, combined with the rules of health and social merriment. (See the Paris *Almanach des Gourmands*. The new series, from 1825, contains songs by Béranger and others.)

Gates, Horatio, was born in England, in 1728. He early embraced the career of arms, and rose to the rank of major by the force of merit alone. At the capture of Martinico, he was aid to general Monkton, and, after the peace of Aix-la-Chapelle, was for some time stationed at Halifax in Nova Scotia. Seven years afterwards, he was again called into active life, by the breaking out of a new war, and was with Braddock when that unfortunate commander was defeated, 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 repaired to his native country. He soon, however, returned, and purchased an estate in Virginia, on which he resided until the commencement of the revolutionary war in 1775, when he 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 were redressed. Congress, in consequence, endeavored to reconcile the pretensions of the two generals, by assigning to 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 coöperate in this service as far as lay in his power. But they were only able to equip about 15 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 clamor. 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 with him, during his operations in the middle colonies, until the spring of 1777, when he re-

sumed his command on the northern frontier. Here he was shortly afterwards superseded by Schuyler. But in August following, when Burgoyne had obtained possession of Ticonderoga, defeated St. Clair, occupied fort Ann and Skeensborough, and had arrived at fort St. Edward, on the upper branches of the Hudson, Gates was reinstated in the command. At fort St. Edward, Burgoyne remained for some time, in order to collect necessaries, and then, passing the Hudson, encamped at Saratoga. Gates immediately put himself in motion with an equal force, and, September 19, an almost general engagement took place without any decisive result. October 8, another action occurred, in which the British were totally defeated, and, on the 16th, Burgoyne surrendered with his whole army. This was, perhaps, the most important achievement of the whole war, or the one which had the greatest effect in giving it a favorable result. About this time, when the popularity of general Gates was at its highest point, intrigues were commenced for elevating him to the station occupied by Washington, which were as shameful as they were unsuccessful. How far he himself was engaged in them, or whether he was concerned in them at all, it is not in our power to state; nor should we wish to enter into any details respecting it.—In June, 1780, Gates received the chief command of the southern districts. In this quarter, the affairs of the colonies were in a very bad condition. Charleston had been taken, and general Lincoln captured. When Gates assumed the command of the southern army, it scarcely amounted to 1500 men, badly supplied in every respect. After collecting all the troops he could, and equipping them as well as he was able, he advanced against the enemy, whom he met, August 16, under Cornwallis, at Camden, where the Americans were totally defeated. About fifty days after this disaster, general Greene was sent to supersede Gates, whose conduct was subjected to the investigation of a special court. After a long and tedious inquiry, he was finally acquitted, and reinstated in his command in 1782; but, in the interim, the war had been brought to a glorious termination by the capture of Cornwallis.—When peace was made, he retired to his Virginia estate, and, in 1790, removed to New York, having first emancipated all his slaves, and provided for such of them as could not provide for themselves. On his arrival at New York, he was presented with the freedom of the city, and, in the year 1800, was chosen a member of the state legislature, in consequence of the critical balance of parties at that time, but resigned his seat as soon as the purpose for which he accepted it was gained. He died April 10, 1806, in the 78th year of his age. General Gates possessed a handsome person, rather inclined to corpulence in the middle of his life; was courteous in his manners, and kind and generous in his disposition. He was a classical scholar and a sincere Christian.

Gâtinais, or Gastinais; anciently a country of France, which, in the 11th century, had counts of its own; it was afterwards joined to Anjou. It afterwards belonged partly to the government of Orleans, and partly to the government of the Isle of France, and was distinguished by the names of *Gâtinais Orléanais*, and *Gâtinais Français*. It now forms part of the departments of Seine-and-Marne, Seine-and-Oise, and Loiret.

Gatterer, John Christopher, born at Lichtenau, in the territory of Nuremberg, 1727, studied at Nuremberg and Altdorf, devoting himself particularly to historical science, obtained a place in the gymnasium at Nuremberg, went, 1758, as regular professor of history, to Göttingen, and died there in 1799. He made himself master of the whole province of history and its auxiliary branches, geography, genealogy, heraldry, diplomacy, numismatics and chronology; illustrated its departments by various important works and treatises, and introduced into the study of universal history, and the academic discourses on this subject, the improved method which connects the narrative 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 daughter, Magdalen Philippina, the widow of Engelhard, 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 *Thurgau*, *Aargau*, *Rheingau*, district or canton of the rivers Thur, Aar, Rhine.

Gau, Charles Francis, of Cologne, architect of the French government (from 1816), received his education at the academy of arts in Paris. During his residence at Rome (1817 and 1818), he conceived the

bold plan of travelling into Nubia, of making a continuation of the grand work on Egypt, and finishing by his own single labors the undertaking of the Egyptian institute. He consulted with the celebrated Niebuhr about this journey, and a rich traveller offered to accompany him; they separated, however, on their arrival in Egypt. Nevertheless, Gau resolved to proceed, although destitute of means. He followed a caravan from Alexandria on foot, and without baggage, and lived on the hospitality of the Arabs, without being able to speak their language. He at length reached the pyramids. Drovetti, the former French consul, procured a firman to enable him to proceed. Gau arrived at Thebes. There Drovetti chose some Arabs, to whom he recommended, with promises of reward, the life and safety of the young traveller, and furnished the boat which was to receive them, with biscuit, rice and dry pulse. Four sailors, a pilot, and a French Mameluke, who was to act as interpreter, were added to the company. In 14 days, Gau came to Essuan, where are the ruins of the ancient Syene, intentionally hastening by Ermenti, Edfu and Com Ombos. Permission had been granted him to pass the falls of the Nile, and even to retain the sailors whom he had brought with him from Thebes, contrary to the usual custom; but he only took with him from Essuan a Nubian pilot, and an interpreter of the Barabara language, spoken in Nubia. In the way which was in use in the times of Herodotus, Gau passed over the first falls of the Nile. Availing himself of the wind, which was favorable to his ascending the stream to the second falls of the Nile, he took only a flying survey of the places which he intended to examine more minutely on his return, and happily reached the end of his destination. He was now at liberty to stay where he pleased, and to take drawings and measurements at his leisure. He found 21 monuments between the second cataract and Philæ, hitherto entirely unknown, or at least never described or represented in drawings. His choice of subjects, as well as his correctness of representation, has been universally applauded. The faithfulness of his drawings, which is preserved also in the engravings, and the accuracy of his measurements and other statements, have called forth from the French critics a unanimous testimony, that his work (Newly-discovered Monuments of Nubia; Stuttg., Cotta, printed in Paris, 12 numbers, each having from 4 to 6 engravings, large folio) forms a necessary continuation of "the work of victory and genius," and may be properly joined to the magnificent description of Egypt, which embraces the region of the Nile only as far as Philæ. The text was committed for the most part to the care of Niebuhr, in whose hands Gau left the numerous inscriptions which he had collected in Nubia. After his return, Gau remained some time at Rome. He was then naturalized in France, and received, in 1825, the cross of the legion of honor.

Gaudin, Martin Michael Charles, duke of Gaëta, born 1756, at Paris, son of an advocate, was himself also an advocate, and, at the age of 22, became head of one of the bureaus connected with the department of imposts. When the department of finance was changed, in 1789, into a national treasury, Gaudin was appointed one of the commissioners intrusted with the direction of it. In the reign of terror, he succeeded, by means of Cambon, in saving the 48 ancient receivers of the finances, whom the convention had included, through ignorance, in the decree which sacrificed 60 farmers-general to the revolutionary tribunal. He then rescued the celebrated D'Esprémenil, formerly counsellor of parliament. He afterwards withdrew himself from all business. The director Sièyes again gave him an office, and, after the 18th Brumaire, Bonaparte appointed him minister of finance, and afterwards duke of Gaëta. He held his office till the restoration of the Bourbons, then had a seat in the chamber of deputies, from 1815 to 1818; in 1820 became president of the French bank, again lost this place, but still continued active in the business of the institution. Gaudin has constantly kept aloof from all parties, and has been courted by all. He was the first who introduced order and regularity into the French financial system. The *Mémoires, Souvenirs, Opinions et Écrits de M. Gaudin, Duc de Gaëte* (Paris, 1826, 2 vols.), are of great importance for the history of the French financial system from 1800 to 1820.

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 this side (the Italian side) of the Alps (Gallia Cisalpina), and Gallia beyond the Alps (Gallia Transalpina). I. Gallia Cisalpina extended from the Alps to the Adriatic sea, and, consequently, comprised all Upper Italy as far as the Rubicon and

Macra. In consequence of its connexion with Italy, it assumed the Roman manners and customs, received the Roman citizenship from Cæsar, and, on account of its adoption of the Roman *toga*, was called *Gallia togata*. It was divided into, 1. Liguria, comprising the territory of Genoa and Lucca, with a part of Piedmont; 2. Gallia Transpadana, Gaul beyond the Padus (the Po); and, 3. Gallia Cispadana, i. e., Gaul on this side of the Po. Liguria was inhabited by the Ligurians, Gallia Transpadana principally by the Taurinians, Insubrians, and Cenomanes; Gallia Cispadana by the Boii, 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 Tergeste (Trieste), Aquileia, Patavium (Padua), Vincentia (Vicenza), Verona, Mantua, Cremona, Brixia (Brescia), Mediolanum (Milan), Ticinum, (Pavia), Augusta Taurinorum (Turin); in Gallia Cispadana, Ravenna, Bononia (Bologna), Mutina (Modena), Parma, Placentia (Piacenza). II. Transalpine Gaul was also called *Gallia comata*, in distinction from *Gallia togata*, because the inhabitants wore their hair (*coma*) long, or *Gallia braccata*, because, particularly in the southern parts, they wore a kind of breeches (*braccæ*), 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 *Provincia* (which was afterwards changed into Provence). It was bounded by the Alps, the Cevennes and the Rhone. Cæsar, 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 Celtica, from the Garonne to the Seine and Marne; 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, Rhine and the North sea; capital places, Vesontio (Besançon), Treveri (Treves) 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 secunda* or inferior. In it were situated, along the Rhine, Colonia Agrippina (Cologne), Moguntiacum (Mentz), Argentoratum (Strasbourg). 3. Gallia Lugdunensis, or Celtica, comprised the rest of the country of the Celtæ, the whole region between the Seine, Saône and Loire, as far south as the Cevennes and the Rhone; chief towns, Lugdunum (Lyons), Alesia (Alise), Bibracte, afterwards called Augustodunum (Autun), Lutetia Parisiorum (Paris). The latter was in, the time of Cæsar, an insignificant place, confined to the island in the Seine; but it soon rose into importance on account of its favorable situation. 4. Gallia Narbonensis, formerly the Provincia Romana. Here were the cities Narbo Martius (Narbonne), an old Roman colony, Tolosa (Toulouse), Nemausus (Nismes), Vienna (Vienne), Massilia (Marseilles). The latter city was an ancient Greek colony. (See Serpette de Marincourt's *Histoire de la Gaule;* Paris, 1822, 3 vols.)

The Gauls were the chief branch of the great original stock of Celts. They called themselves *Gaël* or *Gaïl*, 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 Rhætii), Vindelici, Norici, Helvetii, the Alpine countries. A new swarm, under the name of *Rasena*, probably separated from the Rhætii about 2000 B. C., and entered Italy by the way of Trent. There they received the names of *Tusci*, *Etrusci*, from the neighboring nations, and, having conquered 300 cities of the Umbri, who were before the ruling people in that region, they overran 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 Aztecks 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 and the Rhine, in the country 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 Gauls about 397 B. C. Colonies 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), first brings 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 superiority passed into different hands; but the general system remained 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 they secretly taught in the depths of shady groves and dark caves. They were not ignorant of astronomy, the natural sciences and poetry; but their religion was replete with abominable priestcraft, and horrid superstitions (frequent sacrifices of human beings). Duels and drunkenness were common among them; cities few, 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-colored, checkered and shining 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 (captives were often sacrificed; the skulls of the slain served as trophies, 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 badly 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 allured 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 Etrusci. But the tempest of this migration was soon directed against the city of Rome itself, which, foreseeing its own fate in the destruction of the Etruscan cities that lay around it, endeavored 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 flower of the Roman youth in an engagement on the small river Allia, 389 B. C., sacked and burnt the city, and laid siege to the capitol, which was on the point of purchasing its deliverance with gold, when

Camillus (q. v.) appeared to rescue it.—Our accounts of the course 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 Cimri or Cimbri, were already mixed with the Celtæ. 109 years after the burning of Rome, the eastern Gauls, from 280—278 B. C., made three destructive irruptions into Macedonia and Greece, which had already been depopulated 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, where, under the name of *Galatians*, they long retained their national peculiarities, and preserved their language even to the latest period of the empire. The reaction of these migrations upon Gaul itself appears to have been considerable. The Gauls along the banks of the Danube, and in the south of Germany, disappear from that time. Tribes of German 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 *Belgæ*, 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 Belgæ or Cimbri are in fact the ancient Britons. The Celtæ 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, in whose armies they frequently served as mercenaries, 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 Belgæ and Cimbri, and the Britons, who painted their bodies, fought from chariots, and practised polygamy, were more fierce than the Celts. The mountain or highland Gaels (Caledonians) in Scotland were complete savages, as were also the inhabitants of Ireland, who not only painted but tattooed themselves; and among whom, even at a much later period, human flesh was considered a delicacy. But at the same time, they knew how to defend their liberty. In the mean while, their Transalpine brethren (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 Rhætian Alps, had taken up their residence in the fertile plains of Upper Italy. Here they continued formidable to 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 Rome, the hour of revenge was come. The Gauls in 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, reduced them again to submission. 31 years later (189 B. C.) their kindred tribe in Asia, the Galatians, met with the same fate; they also were vanquished, and their princes (tetrarchs) became tributary. Dejotarus, 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 could easily march troops into that country. By the subjection of the Allobroges and Arverni, the latter of whom were at that time the principal nation in Gaul, the Romans, in the years 123—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 splendor to 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 Teutones and Cimbri, nations of German origin. They were joined by many tribes, particularly Gauls, who, from time immemorial, had been connected and mixed with the Cimbri; and they destroyed four consular armies. Rome, the mistress of the world, trembled at the irruption of these barbarians into Italy; but Caius Marius (q. v.) saved the republic. In two bloody battles, at Aix in 102, and at Vercelli 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 remained in Gaul, to await the issue of the expedition, escaped the general ruin. 43 years after this event, Caius Julius Cæsar received the proconsulship over the countries bordering on Gaul. He resolved to subject all Gaul, and executed his purpose in less than 9 years (58—50 B. C.), in 8 bloody campaigns. Cæsar found Gaul torn by internal dissensions; enfeebled by the attacks of the Germans, a body of whom, under their king Ariovistus (Ehrfest), had passed the Rhine, and many nations, especially the Ædui, old allies of Rome, favorably disposed towards him. At first, he assumed the character of a deliverer 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 Belgæ, 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 valor of their ancestors, they had become more ready to imitate the regular warfare of the Romans. When they perceived that the Roman troops were continually maintained in their country, they became alarmed for their liberty, and rose against their oppressors. More than once the Romans suffered heavy losses; but their superiority in the art of war, and the genius and fortune of Cæsar (after the sacrifice of a million of Gauls), secured them the final victory. The last great leader of the Gauls, the valiant Vercingetorix, 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. Cæsar 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 coasts, the priests 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 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 Franco-Germanic words, formed the modern French 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 Celto-German language (of the Belgæ and Cimbri) in Wales, Cornwall and Basse-Bretagne.

Gaurs. (See *Guebres.*)

Gauss, Charles Frederic, one of the first mathematicians of the age, born April 23, 1777, in Brunswick, since 1807, professor of mathematics and astronomy in Göttingen, displayed, when at school, striking indications of talent, and attracted the notice of duke Charles William Ferdinand, who interested himself in the further education of the youth. In his disputation for the doctor's degree (1799), Gauss showed his acuteness and ingenuity in the criticisms which he made upon the former attempts to demonstrate the first principles of algebra, at the same time proposing a new and rigorous demonstration of his own. But, in 1801, he gave a more brilliant display of his powers, in his *Disquisitiones mathematicæ* (Leipsic, 1801), a work full of the most refined mathematical speculation, by which the higher arithmetic has been enriched with beautiful

discoveries. When Gauss began to apply his whole power of mind to these peculiarly attractive speculations, he was unacquainted, for the most part, with what had been already done by others. To this circumstance we are indebted for the new demonstrations of most of the propositions, the exactness and elegance of which remind us of the old geometricians. When the new planets were discovered, at the beginning of this century, Gauss investigated and ascertained new methods for the calculation of their orbits. He applied these methods himself, and gave us an accurate knowledge of those new bodies. He communicated these methods to the public in the *Theoria Motus Corporum cœlestium* (Hamb., 1809, 4to.), a work which contributed much to give a right direction to the efforts made about this time for a more exact and proper use of astronomical observations. More recently, Gauss has taken a new view of the problem relating to the disturbances of the heavenly bodies. The cause of science has also received great benefit from his *Theoria Combinationis Observationum Erroribus minimis Obnoxiæ* (Götting., 1823, 4to.). Since the completion of the new observatory at Göttingen, he has also devoted his time to astronomical observations. He has been lately occupied in carrying on the Danish measurement of the degree in the kingdom of Hanover; in doing which he has discovered a method of making the most distant stations visible by reflected solar light. He has occasionally read essays of great merit before the society of Göttingen. All the writings of Gauss have a finish and completeness which leaves nothing to desire. He is not satisfied with the mere disclosure of a truth or method, but brings it out fully in all its bearings, while even his style is always highly correct and polished. Respecting the instrument called *heliotrope*, invented by Gauss, consult Bode's Astronomical Almanac (*Astronom. Jahrbuch*) for 1825.

Gaut; a term made use of in the East Indies, to denote a passage or road from the coast to the mountainous or upland country. (See *Hindostan*.)

Gauze, in commerce, a thin, transparent stuff, sometimes woven with silk, and sometimes only of thread. Gauzes 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. Gauzes of excellent quality have, of late years, been manufactured at Paisley.

Gay, John, an eminent English poet, was born at or near Barnstaple, in 1688, 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 indentures 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 a friendship which lasted for life. In 1712, he accepted the office of secretary to Anne, duchess of Monmouth, which left him at leisure to pay his court to the muses; and his pleasant mock-heroic poem, entitled Trivia, or the Art of Walking the Streets of London, was published in the same year. In 1714, his caricature of Ambrose Philips'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 their interest he was appointed secretary to the earl of Clarendon, in his embassy to the court of Hanover; but the death of the queen once more threw a cloud upon his prospects. In 1715 appeared his burlesque drama of What d'ye 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 favor 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 at Drury-lane. Its chief purpose was to ridicule the 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 so offended the persons in power, that the 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 £1200, whereas the Beggar's Opera had gained him only £400. The duke and duchess of Queensbury 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 1732, 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.

Gay-Lussac, member of the academy of sciences, and professor in the polytechnic school at Paris, a chemist and natural philosopher of the highest eminence, first brought himself into notice, at Paris, by ascending in a balloon, with Biot, to the height of 3600 toises (23,018 English feet), a greater height than had been ever before reached. This ascension was the means of leading him to a number of remarkable discoveries in natural philosophy, which (as, for instance, his observations on the rising and falling of the mercury, and many other fluid and elastic bodies in the higher region of the atmosphere, as well as under different degrees of temperature) have been confirmed by repeated experiments, and gave occasion to the investigations of Dalton, upon the uncommon expansion of the volume of fluids (especially water) in passing through all the degrees of temperature from the freezing to the boiling point. At a subsequent period, Gay-Lussac joined with Alexander Humboldt in an attempt to determine exactly the deviation of the magnetic from the terrestrial equator, in which they both took for the basis of their work the observations of La Peyrouse, relating to this subject. There are some interesting essays of Gay-Lussac in the *Annales de Chimie* and the *Bulletin de la Société Philomathique*. With his present colleague, Thénard, he has published *Recherches Physico-chimiques faites sur la Pile Galvanique, et les Préparations du Potassium* (Paris, 1811, 2 vols.).

Gaza, Theodore; a successor of Emanuel Chrysoloras as teacher of the Greek 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 Nicolas V invited him, with other learned men, to Rome, where cardinal Bessarion took him into his suite. After the death of Nicolas, 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 labored 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 natural history.

Gaza; a town of Palestine, about a mile from the Mediterranean sea; 44 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 neighborhood. There are likewise great quantities of ashes made by the Arabs, and used in 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 Segiayè*.

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 by 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, is that of Stephen of Byzantium, who lived in the beginning of the 6th century. We have only an abridgment of it. The first modern work of the kind is the *Dictionarium Historico-Geographicum* (Geneva, 1565), by Charles Stephens, with additions, by N. Lloyd (Oxford, 1670, and London, 1686). The works of Ferrari (*Lexicon*

Geographicum, 1627), and Baudrand (*Geogr. Ordine Literarum Dispos.*, 1682), are full of the strangest errors. Those of Maty (1701), Thomas Corneille (3 vols., fol., 1708), and Savonarola (1713), were based on the former, with additions and corrections. The *Dictionnaire Géographique, Historique et Critique*, of La Martinière (Hague and Amsterdam, 1726, 10 vols., folio, Paris, 1768, 6 vols.), superseded all that had gone before it, though it retained many errors. An abridgment of it by Ladvocat, under the assumed name of *Vosgier*, has continued to be republished in France till the present time. The *Geographisch-Statistisches Handwörterbuch* 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 Cruttwell (London, 1808, 4 vols. 4to.), and the Edinburgh Gazetteer (6 vols., 8vo., 1817—1822), are the principal English works of the kind. The latter, though not 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 of French gazetteers is the *Dictionnaire Géographique Universel*, now (1830) publishing in Paris. The first volume appeared in 1823 (*chez Kilian et Piquet*), the seventh in 1830. Among the contributors are Depping, Klaproth, the Lapies, Rémusat, Walckenaer and Warden. A. von Humboldt and the late M. Malte-Brun have also assisted in the work. The Gazetteer of Mr. J. E. Worcester (second edition, Boston, 1823, 2 vols., 8vo.) displays the industry and accuracy of its editor in a favorable light. It is particularly valuable for America.

Gearing is the connexion of one toothed wheel with another. (See *Wheels*.)

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 Africanus, lived in the 8th 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, in 1533, and his alchemical works were published in Latin, by Golius, under the title of *Lapis Philosophorum*, and an English translation of them by Robert Russel 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 *Geber*, 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.

Gebers. (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 of provisions over which it has crawled. A peculiar acrid mucus 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 lamellæ, by means of which the animal is enabled to exhaust the air under the foot, and thus adhere forcibly to any flat surface on which it 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 colors, as the *G. inunguis*, *ocellatus* and *cepedii*. *G. Mauritanica*, the common species of the south of France, &c., is of a deep gray color; 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 *stellio*, a name now appropriated to another genus of lizards. The gecko of the Levant and Egypt, the *lacerta gecko* of Linné, is smooth, reddish gray, 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 *abou burs* (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. fimbriatus*, or *famo-cantrata* of the natives of that island, where it is much dreaded, but without reason.

Geddes, Alexander, a Roman Catholic divine, was born in Scotland, in 1737. At the age of 21, 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 LL. 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 plenary inspiration of the Scriptures, and the divine mission of Moses, his work met with much censure, and his own immediate superiors suspended him. In 1797, he published the second volume of his translation, which, displaying equal latitude, produced similar censures from both Catholics and Protestants. He was in the midst of a translation of the Psalms, when he died in 1802, 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 indifferent verses. Dr. Geddes' 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 to others every privilege which he claimed for himself. (See Good's *Life of Geddes*.)

Gedike, 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 Frankfort, and, in 1779, became rector 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 *Chrestomathias* in several languages have long been considered the best. His works on education contain many useful ideas.

Gehenna. (See *Tophet*.)

Gehler, John Samuel Traugott; born at Görlitz, 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 Leipsic. In 1774, he delivered private lectures on mathematics; in 1777, he received a doctorate of law; in 1783, he was made a counsellor at Leipsic, and, in 1786, a member of the supreme court. He died October 16, 1795. Of his many learned treatises, we mention especially his *Dissert. Historiæ Logarithm. Naturalium Primordia* (Leipsic, 1776). The *Physikalische Wörterbuch* (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, Pfaff, 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.

Geistics (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. nesological, 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. orological,

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. oryctological, describing mountains with reference to their formation, age, and component parts: 4. planological geography, relating to the plains, valleys and gentle slopes: 5. thetical geography, which treats of the interior of the earth, fissures, caverns, strata, 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 isinglass. Gelatine is used in a new kind of bread, called *pain animalisé*, now manufactured in Paris. It having been found that the gelatine of bones used for soups was exceedingly nutritious, it was imagined that if this gelatine could be introduced into bread from potato flour, which is very much less nutritious than wheaten flour, the former would be equally pleasant, and even more nutritive than wheaten bread. The experiment has been tried with great 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 flavor, 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 African expedition to Algiers was prepared in this way.

Geld; an Anglo-Saxon word, signifying money or tribute; also a compensation for a crime. Hence *wergeld* was used for the value of a man slain, and *orsgeld*, of a beast.

Gelée, Claude. (See *Claude Lorraine.*)

Gellert, Christian Fürchtegott; born 1715, at Haynichen, a city near Freyberg, in the Erzgebirge, where his father was a preacher. On account of the narrow circumstances of his father, who had a family of 13 children, Gellert, at the age of 11, was obliged to support himself by copying. His first poetical attempt—a poem on his father's birthday—he made at the age of 13. In 1729, he was sent to the royal school at Meissen. 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 idyllic pieces intended for the improvement of the stage. With a view of adding to the dignity and utility of romance, he wrote his *Schwedische Gräfin* (Swedish Countess). He was much afflicted at times with hypochondria. For 12 years, he had lectured in Leipsic with much applause, 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 favorite 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 most of the external means of happiness; but his health grew continually worse, and his disorder would not yield to medicine. He died, with Christian resignation, December 13, 1769, aged 55. His private character was highly amiable. No literary man was ever more ready to allow the merit 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 humor, liveliness, ease and keen satire. In his tales, he is 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 last edition of his complete works appeared at Leipsic, 1784, in 10 volumes.

Gellius, Aulus; 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 centumvir. He is the author of *Noctes Atticæ* (Attic Nights), 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, 1681, 4to. (*in Usum Delphini*); Amsterdam, 1651, 12mo., by Elzevir; Leyden, 1666 (*cum Notis var.*); Leyden, 1706, 4to., by Gronovius; Leipsic, 1762, 2 vols., by Conradi, &c.

GELLY. (See *Jelly.*)

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. When Greece was threatened by Xerxes, Athens and Sparta sent ambassadors to him, to conclude an alliance against the king of Persia. Gelon offered 206 galleys, 20,000 heavy-armed soldiers, 4000 horsemen, 2000 archers, and as many slingers, with provisions for them during the war, if they would yield to him the supreme command by land and sea. The conditions were rejected. Gelon therefore refused the desired assistance, and sent to Delphi a man, by the name of Cadmus, with orders to await the result of the war, and, if the Greeks were overcome, to pay homage to Xerxes in his name, and to send him valuable presents. He was not then aware that Xerxes had induced the Carthaginians, while he was assaulting the Greeks in their own country, to make an attack on their settlements in Sicily and Italy. Hamilcar finally landed at Panormus, with a fleet of 2000 ships of war and 3000 transports, carrying, in all, 300,000 land troops, and laid siege to Himera. Gelon marched against this army with 50,000 infantry and 5000 cavalry. He learnt from an intercepted letter, that Hamilcar intended to engage in a solemn sacrifice the next day, and to receive auxiliary troops into his camp. Gelon succeeded in introducing, in the room of the auxiliaries, a detachment of his own cavalry into the enemy's camp, which fell upon Hamilcar in the midst of his religious ceremony, slew him, and set fire to his ships. At the same time, Gelon assailed the Carthaginians, who were dejected by the death of their general and the loss of their fleet, and totally discomfited them. 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 booty was immense, and Gelon offered the Carthaginians peace only on condition that they should pay 2000 talents of silver, erect two temples for preserving the conditions of peace, and abolish forever human sacrifices. His next ambition was to obtain the title of royalty. For this purpose, he summoned a meeting of the people, before whom he appeared unarmed, and declared his intention of resigning his high power. All were filled with wonder and astonishment; and the general voice hailed him as the preserver 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, perpetuated the memory of this event. Generosity and kindness were the characteristics of Gelon's administration. Ever striving to make his people happy, he died after a reign of seven years. He was succeeded by his brother Hiero.

GEMAPPES. (See JEMAPPES.)

GEMINI; the Twins (♊); one of the northern signs, being the third 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 sort 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 emerald; and then the jacinth. 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 color; amethyst, purple; diamond, white; ruby, red or crimson-colored;

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; vermilion 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 color 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, but all opaque; toad's eye, black; turquoise, of a yellowish blue inclining to green; lapis 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 colors 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 ingrafted 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 natural, but it was really a sort of coat of enamel that 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 diamond, of which the powder is made, are worth 28 shillings a carat. 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 color and lustre, by compositions in glass. In order to approximate as near as possible to the brilliancy and 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 color. 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 color 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 tripoli has been found best adapted for this purpose.

Gem-Sculpture; the glyptic art, or lithoglyptics; 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 Hebræorum*, 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 lathe, the *maxium*, the *ostracitis*, the diamond point, and diamond powder. Respecting the species of stones chiefly used by the ancients, and the mystical powers attributed to the different kinds, see Bellermann's *Urim und Thummin, die ältesten Gemmen* (Berlin, 1824.) Whether the Egyptian *scarabæi*, and the Græco-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 Cronius 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 learn from their works themselves (of whom Gr. Clarac has given a list in his *Description des Antiques du Musée Royal de France*, Paris, 1820), took the masterpieces of sculpture for their subjects and models. Under the Roman emperors, in particular, this was very common. The names of Dioscorides, Apollonides, Aulos, Hyllos, Cneius, Solon, remind us of 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 apotheosis of Augustus in Vienna, the onyx, at the Hague, representing the apotheosis of the emperor Claudius, Achilles lamenting Patroclus, the head of Julius Cæsar (Agincourt's Sculpt. pl. 48),—these, and the Brunswick vase, and the Trivulcian 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 had 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 Cæsar, six tablets, with six gems, in the temple of Venus. At a 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 *abraxas* (q. v.) and *abraxides*, in some rare works of the Byzantine period (Dufresne *in Leo Diaconus;* ed. Hase, Paris, 1819, folio, and Raspe's Catalogue of Tassie's Collection,) and in some artificial gems of the first centuries of the Christian era. From the time of Gallienus, these marks of degeneracy are particularly striking. 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 shrines of saints, royal badges 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. The stone, with the head of Richilde, the wife of Charles the Bald (Montfaucon's *Monum. de la Mon. Franç.*, vol. i, table 28), is a relic of a period of which hardly any other works of art remain, except, perhaps, a few on religious subjects. 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 Palæologus, at the council of Florence, 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, *Giovanni delle Corniole*, distinguished himself in this early period of the modern art. There are but few gems which can be ascribed to him, with any confidence, beside the famous cornelian in the Florentine museum, with the portrait of Savonarola, bearing the inscription *Hieronymus Ferrariensis ordinis prædicatorum, propheta, vir et mar-*

tyr. This stone, which must have been engraved later than 1498, is given in Agincourt's Sculpture (tab. 48, number 82). Contemporaries and rivals of Giovanni were Nanni di Prospero dalle Carniole, in Florence, whom Francesco Salviati directed in his works, and Domenico Compagnie (*dei camei*), a Milanese, whose portrait of Ludovico Sforza, called *Moro*, cut in a ruby, is still preserved in the Florentine museum. After Bernardi (*delle Corniole*), Valerio Vicentino (under 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 connoisseur 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 Pescia, as the figure of the fisherman in the exergue may indicate that artist, who, with Michelino, 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 *Pyrgoteles*, which Fiorillo endeavors 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 16th century, deserves particular mention. It was intended by Clement VII as a present to Francis I, when Catharine of Medici went to Marseilles in 1533. At present, it is in Florence. Drawings of it are to be found in Agincourt's Sculpture (table 43) and in Cicognara (ii, table 87). The Milanese particularly distinguished themselves, as the wealth of the principal citizens of Milan enabled them to patronise this art. Jacopo da Trezza, the same artist who, in 1564, executed, for Philip II, the famous tabernacle of the Escurial, 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 Cicognara's *Storia della Scultura, edizione di Prato*, v, p. 446.) The first traces of gem-engraving in Germany are found in the 14th and 15th 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 Antique de graver en Pierre Fine, comparée avec la Méthode Moderne* (London, 1755). Natter himself, Pichler and Marchant are considered as the restorers of this art in that country. Facius 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. France and England have not produced any first-rate gem-engravers. The most distinguished artist of the age is, perhaps, Berini, a native of Rome, now at Milan, who, with Cervara and Giromelli at Rome, and Putinati at Milan, has produced the finest works in recent times. Jakob Frischholz's *Lehrbuch der Steinschneidekunst* (Manual of Gem-Engraving, Munich, 1820) is considered a good work, as also is P. Partsch's *Verzeichniss einer Sammlung von Demanten und der zur Bearbeitung derselben nothwendigen Apparate* (Vienna, 1822, 4to.).

GENDARMES. (See *Gens d'Armes.*)

GENEALOGY. The systematical account of the origin, descent and relations of families is an auxiliary of historical science. Genealogical knowledge becomes important in a personal or legal view, when family claims are to be established. Genealogy is founded on the idea of a lineage or family. Persons 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, particular names are given to the progenitors by the civil law (*pater, avus, proavus, abavus, atavus, tritavus, protritavus*), and to the descendants (*filius, nepos, pronepos, abnepos, atnepos, trinepos, protrinepos*). The other ascendants are called, in general, *majores* (ancestors), and the other descendants, *posteri* (or posterity). The collateral lines comprehend the several lines which unite in a common progenitor. They are either equal or unequal, according as the number of degrees in the lines is the same or different. The collateral relations on the father's side are termed *agnati*, on the mother's, *cognati*. Children stand to each other in the relation either of the full blood or the half blood, according as they are descended from the same parents, or have only one parent in common. For illustrating descent and relationship, genealogical tables are constructed, the order of which depends on the end in view. In tables, the object of which is to show all the individuals embraced in a family, it is usual to begin with the oldest progenitor, and to put all the persons of the male or female sex in descending, and then in collateral lines. Other tables exhibit the ancestors of a particular person in ascending lines, both on the father's and mother's side. In this way, 4, 8, 16, &c. ancestors are exhibited. (See *Ancestors*.) The tables showing the succession of rulers contain merely the descent of the persons who have reigned in succession, or who have claims to the government. In connexion 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 their degree of relationship. 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 attach to the descent the biographies also 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. In German history, no family names occur before the middle of the 11th century. The oldest trace of them, according to Gatterer, is in 1062, when a Henricus de Sinna is mentioned in Schannat's *Buchonia Veteri*. In the 12th and 13th centuries, family names began to be more common. Genealogy was more scientifically treated, by the Germans in particular, after history in general had attained a more systematic character. Gatterer (*Abriss der Genealogie*,—Sketch of Genealogy,—Göttingen, 1788), Pütter (*Tabb. Geneal.*, Göttingen, 1768, 4to.), Koch in Strasburg, and Voigtel (1810), first carried it to a higher perfection.

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 when the matter of defence may be urged 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 mathemati-

cians 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, time is 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.

Generation of Steam. (See *Steam.*)

Generator. (See *Steam Engine.*)

Generical 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 generical 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 generical 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.

Genesareth, or Gennezareth (called also *Chinnereth*, *Cinneroth*, *Genesar*, *sea of Galilee*, and *sea of Tiberias*); a lake in Palestine, 28 miles east of Acre, 45 north of Jerusalem. It is 17 miles long and 6 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 unparalleled by any similar scenery."

Genesee; a river 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 96 feet, and, one mile higher up, other falls of 75 feet. Above these, it is navigable for boats nearly 70 miles, where are two other falls, of 60 and 90 feet one mile apart, in Nunda, south of Leicester. An aqueduct for the Erie canal crosses this river at Rochester. 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.

Genesis, in mathematics, 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 *describent*, and the line in which the motion is made, the *dirigent.*

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.

Genethliacon; a birth-day poem.—*Genethliatic;* one who predicts the fortune of an infant from the situation of the stars at the moment of its birth. (See *Astrology.*)

Geneva; a Protestant canton of Switzerland (q. v.), with 9137 square miles, and 53,560 inhabitants; of these 37,700 are Calvinists, 15,800 Catholics, 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 manufactures, 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 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 gold and silver jewelry are important. Besides these, there are factories for chintz, woollens, muslins, gold-lace, silks and porcelain. The advantageous situation of the lake of Geneva is favorable to commerce, but the vicinity of France encourages smuggling. Geneva

acquired, by these means, so much wealth, that she had 120,000,000 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 1524, the city released herself from the ducal government, and, in nine years after, from the bishop's also, by openly adopting Protestant doctrines. Several families, adherents of 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 escalade. In 1603, by the mediation of Berne, 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 guarantied 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 citizens; and from these a small council of 25 members was chosen, under the presidency of the syndic. These had the executive power, the care of the 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 18th century, very frequently, in violent eruptions, and in the demand for an amendment of the constitution. The complainants were denominated *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 sprang from families recently introduced from abroad, who might attend the general council, but could not be members of 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 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 minister, Vergennes, with arms in their hands, in favor of the oligarchy; but the consequence was, that many families emigrated to Constance, to Neufchâtel, 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, and many of the emigrants and exiles returned; but the French revolution now broke out, and, during the reign of terror, in 1792, Soulavie 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. Dec. 30, 1813, Geneva capitulated to the allies. Since then, it has formed the 22d canton of the Helvetic confederation. The constitution of Geneva is aristocratico-democratical. A council of state, composed of four syndics of the present and four of the past year, with 21 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 laboring classes, who, to give an instance, in 1815, when Decandolle 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 of natural science, founded in 1818, and comprising Saussure's mineral collection, Haller's *herbarium*, Pictet's philosophical apparatus. The society of arts have appropriated 80,000 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 penitentiary was built, after the model of that in New York. In 1820, an agricultural school for poor children, like that at Hofwyl, was established at Carra, 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; Eynard'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 furnished a subject for several poets, such as Matthisson, and lord Byron (in Childe Harold, I). It is over 41 miles long, and its greatest width is about 8½ miles. It is deep, and well supplied with fish, and does not freeze entirely over, although it lies 1126 feet above the level of the sea. The situation of Geneva is beautiful beyond description. (For a more particular account of it, see the *Topographical and Statistical Account of the City and Canton of Geneva*, by Manget, Geneva, 1823.)

Geneva, or Gin; a hot, fiery spirit, much used by the lower classes of people as a dram, and unquestionably most injurious to their constitution and morals. A liquid of this kind was formerly sold in the apothecaries' shops, drawn from the juniper berry; but distillers have now completely supplanted the trade of the apothecary, and sell it under the name of *geneva*, or *gin*, of which, it is believed, juniper-berries make no part of the composition. It is composed of oil of turpentine and malt spirits. A better sort is said to be drawn off, by a slow fire, from juniper-berries, proof-spirits and water, in the proportion of three pounds of berries to four gallons of water and ten of spirit. The celebrated Holland geneva is manufactured chiefly at a village near Rotterdam, from the same materials, French brandy being used instead of malt spirits.

Genevieve;—1. St. Geneviève; born at Nanterre, about five miles from Paris, in the year 423, about the time of Pharamond, the first king of France. St. Germain, bishop of Auxerre, observing in her, when yet very young, a particular disposition to 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 Geneviève assured the inhabitants of complete security, 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, Geneviève's reputation was established. In a time of famine, she went along the river Seine, from city to city, and soon returned with 12 large vessels loaded with grain, which she distributed gratuitously among the sufferers. This increased her authority, and she was highly honored by Merovæus and Chilperic. Nothing, however, contributed more to her reputation for sanctity, than the circumstance, that, from her 15th to her 50th year, she ate nothing but barley-bread, except that she took some beans every two or three weeks, and, after her 50th year, some fish and milk. In 460, she built a church over the graves of St. Dionysius Rusticus and Eleutherius, near the village of Chasteville, where Dagobert afterwards founded the abbey of St. Denys. She died in 499 or 501, and her body was placed in the subterraneous chapel which St. Denys 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 founded there. Another church, consecrated to this saint, was built adjoining to the church of Notre Dame. Her reliques are preserved in the former. The church celebrates the 3d of January, the day on which she died, in honor of her. With this saint must not be confounded,—2. another St. Genevieve, countess palatine, by birth duchess of Brabant, who, having been accused of adultery, was condemned to die, by her husband, Siegfried. Being

saved, however, by the protection of Heaven, she lived six years in a cavern, upon nothing but herbs. She was finally found, and carried home by her husband, who, in the mean time, had become reconciled to her. Among the old German national tales (*Volksbücher*), there is one entitled *Eine schöne anmuthige und lesenswürdige Historie von der unschuldig betrengten heil. Pfalzgräfin Genoveva, wie es ihr in Abwesenheit ihres herzlieben Ehegemahls ergangen*—A fine and interesting Story of St. Genevieve, the Countess Palatine, in which is related what happened to the innocent Dame, who had been persecuted during her Absence from her beloved Husband—(Cologne and Nuremberg). "Of all the books belonging to this class," says Görres, "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. This renowned conqueror was the son of a Mongol chieftain, by the name of Yezonkai, or Yzonkai, whose jurisdiction extended over 30 or 40 clans, but who, at the same time, paid tribute to the Tartar Khans, or Kins, then bearing sway over Eastern Tartary and the north of China. Gengis-Khan was born in the year of the Hegira 559, or A. D. 1163—64, and received the name of Temudjyn. The talents of the youth were so well cultivated by his teacher, Karakhar, that, at the early age of 13, 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 dispossess the stripling of his territory, or to withdraw themselves from his dominion. But he 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 70 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 Karaite Mongols, 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 approaching danger, retreated from the field. Gengis observed this desertion in time, and immediately intrenched himself between Onon and Tula, whence he could render aid to the Karaite 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 1202, 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 more formidable adversary in Tayank, the chieftain of the Naiman Tartars. A battle was fought on the banks of the Altai. Tayank 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-Korom. 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 *Khakan*, or *great Khan*, in presence of the army. At the same time, a devout Khaman, who was highly venerated by the Mongols, prophesied that he would reign over the whole earth, and commanded him to be called henceforth, not Temudjyn, 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 *Yza Gengis Khany*. This code is grounded on monotheism, 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

Oigurs, 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, several Tartar tribes put themselves under his dominion; and, in 1209, he passed the great wall, and sent troops to Leatong and Petscheli. The conquest of China occupied the Mongols more than three years. The capital, then called *Yenking*, now *Pekin*, was taken by storm, in 1205, and plundered. The conflagration lasted a month. The murder of the ambassadors, whom Gengis-Khan had sent to the king of Kharism, occasioned the invasion of Turkestan, in 1218, with an army of 700,000 men. The first conflict was terrible, but undecisive. The sons of Gengis-Khan showed themselves worthy of their father. The Kharismans lost 160,000 men. 1219, the Mongols pushed their conquests still further. The two great cities of Bochara and Samarcand made the greatest resistance. 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 men, who were no longer able to do military service. But one of his counsellors, Tletchusay, 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 him with the liveliest joy. He showed, on this occasion, that he was not destitute 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 60 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 300,000 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 66th year of his age, and the 52d 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, Samarcand, 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 branches. He had himself chosen 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 Genius; i. e., a spiritual being, which introduced him into life, accompanied him during the course of it, and again conducted him out of the world at the close of his career. The Genii 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 Augustus, and of his successors. As the religion of the Greeks and Romans in general was 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 Genii, a white and good one, to whom he was indebted for the favorable 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 behavior of a man, his friend or enemy. From this opinion originated the expressions "to have an incensed 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 conjurer put Antony on his guard against his colleague and brother-in-law, Octavianus. "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 again in 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 unumquodque 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 Jinns of the East, commonly translated *Genii*, seem to be the lineal descendants of the Devalahs and Rakshasas of the Hindoo mythology. They were never worshipped by the Arabs, nor considered as any thing more than the agents of the Deity. Since the establishment of Mohammedanism, indeed, they have been described as invisible spirits; and their feats and deformities, which figure in romance, are as little believed by the Asiatics 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, capable of future salvation or condemnation. Their existence as superhuman 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 disobedience called down the wrath of the Most High, and the angel Iblis, or Eblis, 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 Afrits and Ghouls, 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 Divs, of Persian romance, though probably they are of Arabian origin, and only engrafted in later times 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 effecting, 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 pleonasm 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 incomprehensible, so that cannot be defined, but must be considered as something innate. We estimate it higher than *talent*, in the common acceptation of that term, which, in 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, Göthe 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 required for attaining perfection in each. But if this phrase be 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 application of his mind to the subject being supposed. And, although celebrated artists have seldom excelled in the walks of science, yet there have been men, who have labored 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 jurisprudent.

Genlis (Stéphanie Félicité 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 favorably 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 become the niece of madame de Montesson, 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'Éducation* (1779), *Adèle et Théodore* (1782), the *Veillées du Château* (1784), and the *Annales de la Vertu* (1783)—works on education, to which the reputation and station of the authoress attracted general attention. 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 favorably disposed towards the revolution; that she had received Pétion 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 ma 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 Tournay, where she married her adoptive daughter, the beautiful Pamela, to lord Fitzgerald. Here she saw general Dumouriez, 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 Bremgarten, a few miles from Zürich. The daughter of the duke of Orleans having then gone to join her aunt, the princess of Condé, at Friburg, madame de Genlis retired with her foster-daughter, Henriette Sercy, who was now alone left to her, to Altona, in 1794, where, in monastic solitude, she devoted herself entirely to literature. At a country seat in the territory of Holstein, she wrote the *Chevaliers du Cygne* (Hamburg, 1795)—a novel which contains many republican expressions, and very free descriptions. It appeared in 1805, in Paris, with many alterations. In 1795, she published *Précis de la Conduite de Madame de Genlis*. At the end of this work there is a letter to her eldest pupil subjoined, in which she exhorts him not

to accept the crown if ever it should be offered to him, because the French republic seemed to rest upon moral and just foundations. When Bonaparte was placed at the head of the government, she returned to France, and received from him a house, and, in 1805, a pension of 6000 francs. Her numerous works (upwards of 90 volumes), among which the *Théâtre d'Éducation*, *Mademoiselle de Clermont*, and *Madame de la Vallière*, appear to be the best, are distinguished by their pleasing style and noble sentiments. Most of the works of madame de Genlis belong to the class of historical novels. Lady Morgan, in her work on France, gives a favorable description of her. (For further information, see the *Mémoires Inédits de Mad. la Comt. de Genlis, sur le* 18*me Siècle et la Révolution Française, depuis* 1756 *jusqu'à nos Jours* (Paris, 1825, 8 volumes).

Genoa; a Sardinian dukedom, and a city on the Mediterranean sea, which here forms 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 harbor is enclosed and made secure by two moles, and the city lies in a semicircular form around it. It was made a free port in 1751. In the small inner harbor, called *Darsena*, 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 on horseback. Hence the people make 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 Doria, 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 manufactures of silks, of some importance, particularly the black stuffs, velvet, damask, and stockings, which employ about 1500 looms; also of cloth, cotton hose, 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, and possesses a senate, a high court, and 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 east by Lucca and Tuscany, west and 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 Apennines, which extend in neighboring 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 the 11th century, shared the fortunes of the cities of Lombardy. The situation of the city was favorable 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 12th century, to violent contentions with the enterprising and industrious merchants and tradesmen of Pisa, who became their near neighbors, after Genoa had made itself master of the gulf of Spezzia. In 1174, Genoa possessed Montferrat, Monaco, Nizza, Marseilles, almost the whole coast of Provence, and the island of Corsica. The quarrel with the Pisans continued over two hundred years, and peace was

not concluded until Genoa had destroyed the harbor of Pisa, and conquered the island of Elba. Not less violent was the contest with Venice, which was first terminated in 1282, 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 Græco-Byzantine empire, about the middle of the 13th century. Long before had the inactivity of Constantinople allowed the Genoese to obtain a large share in the commerce of the Grecian states. But when the Genoese took possession 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 Crimea had for a considerable time maintained with Genoa, in their own ships, 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 among the latter, occasioned 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 (*compera 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 18th 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 50 years of age, and to reside in the palace of the republic (*palazza della signoria*), where also 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 continued 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 magistrate. The doge was assisted in the administration of the government by twelve governors 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 affairs. The procurators had charge of the public treasury and state revenue. The sovereignty 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 22 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 a law. The nobility were divided into two classes—the old and new. To the old belonged, besides the families of Grimaldi, Fieschi, Doria, Spinola, 24 others, who stood nearest them in age, wealth and consequence. The new nobility comprised 437 families. The doge might be taken from the old or new nobles, indiscriminately. By little and little, Genoa lost all her foreign possessions. Corsica, the last of all, revolted in 1730, 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. Bonaparte 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 29 senators, and a council of 72 members, as representatives of the people, which met annually, examined the government accounts, and approved the laws proposed to them by the senate. The members of the council were elected by 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 from 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 with fish and salt. 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 loans, and partly for deposit. It possessed some fine territories, and its income was over ten millions of French livres. The administration of its concerns 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 reëstablishment 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. Accordingly, Genoa has its senate, and 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 retained; St. George's bank restored, &c. The government is administered by a commission appointed for the purpose, which is divided into three departments—that of internal affairs, finance, the military and marine.

Gens d'armes; the name originally given in France 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 armor, &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 (*maréchaussée*), employed in the protection of the streets. It was composed of infantry and cavalry, and belonged to the military, but served 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 Villèle'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 1443 men, under the direction of the prefect of police.

GENTIAN; a genus of plants, belonging to the natural order *gentianeæ*, 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-colored. 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 15 species, and one has been discovered in New Holland; 10 species only inhabit the United States. They are herbaceous plants, with simple, sessile, opposite leaves, and terminal or axillary flowers, either solitary or fasciculate, furnished with two styles, and usually five stamens, but sometimes four 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 officinal gentian is the dried root of the *G. lutea* of the European Alps, which has a stem about three feet high, broad, ovate leaves, and numerous yellow flowers; it has an intensely bitter taste, and is frequently employed as a tonic in diseases of debility; indeed, its febrifuge virtues have been celebrated from antiquity, and it was in common use in intermittents 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—*frasera, sabbatia, spigelia*, &c. The *G. crinita* produces one of the most beautiful flowers in North America; it is very large, 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 48th and 38th 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 labored 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 laboring classes, as *gentiluomo, gentilhomme, hidalgo*, &c. In the German language, the term which most nearly 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, laborers, 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 no where taken the lead, in all matters of life, so much as in England, 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. *Gentleman*, in its highest sense, signifies a person who not only does what is right and just, but whose conduct is guided by a true principle of honor, that honor 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 honor and self-respect, which is one of

the best guards against all meanness of conduct. *Gentleman*, in the United States, is a word of a very comprehensive character. The anecdote related of the duke of Saxe-Weimar, during his travels in this country, that a stage-coachman came to his inn, and asked him, "Are you the man who goes in the stage? I am the gentleman that's to drive you," is a good caricature of the wholesale application of the word among us.

GENTOO. (See *Hindoo.*)

GENTZ, Frederic von; one of the ablest political writers of the day, and probably the most efficient assistant of Metternich, was born at Breslau, in 1764. His father was director-general of the mint at Berlin. His mother belonged to the Ancillon family, and was a relation of the royalist writer Ancillon (q. v.), at Berlin. Gentz studied in Königberg, where Kant then lectured. In 1786, he received an appointment at Berlin. In the same year, he made himself known by philosophical and historical articles in learned journals. His translation of Burke's Reflections on the French Revolution, 2 vols. 1793, with notes (three editions), established his literary reputation. He also translated some works of Mallet du Pan, 1794, of Ivernois, 1796, et seq., and of Monnier (Developement of the Causes which have prevented France from acquiring Liberty, 4 vols., 1799). Gentz expressed himself with freedom on the subject of the administration of the country, in his address to king Frederic William III, on his accession to the throne, November 16, 1797, which is not yet forgotten. In 1799 and 1800, he edited the Historical Journal, which was written almost entirely by himself. The most important articles in it were translated into French under the title *Essai de l'Administration Actuelle des Finances de la Gr. Bretagne*, 1801, and thus became known to Pitt, and procured Gentz a good reception in London, where he went in 1801. His work on the state of European politics before and after the French revolution (1801) was translated into English. In his Reflections on the Origin and Character of the War against the French Revolution (1801), he declared himself against peace with France. Gentz went to Vienna in 1802, where count Stadion, minister of foreign affairs, knew how to appreciate his talents. In this year, he visited England a second time, in company with Mr. Elliot, English minister at Dresden, and probably exerted an influence on the subsequent relations between Austria and England, so long combined against Napoleon. When, in 1805, the French advanced from Ulm towards Vienna, he went to Dresden, where, in May, 1806, he published his Fragment of the History of the Political Balance of Europe (St. Petersburg, 1806). In the same year appeared his Authentic Exposition of the Relations between England and Spain. These Fragments were his last published work. The preface of this work has been particularly admired. In 1809, he drew up the manifesto against France. He continued to be confidentially employed by prince Metternich, who had succeeded count Stadion, as minister after the war of 1809; and, in 1813, M. Gentz composed the manifesto in which Austria announced her accession to the grand alliance. In 1814, in the first conference of ministers, M. Gentz was unanimously named first secretary of the congress, which place he continued to occupy till May, 1815, when the congress was finished. He then went to Paris, where he filled the same office in the ministerial conferences which were held there. All the sovereigns who had a share in the great events that then took place, showed how highly they estimated the services of M. Gentz, by the valuable presents which they bestowed on him; and he was named a commander of several orders of knighthood. A number of political works have been ascribed to M. Gentz, of which he is not the author; the fact being that, since 1806, he has not published any work, either in his own name, or anonymously. In many articles in the Austrian Observer, the semi-official paper at Vienna, which supported the cause of the Turks, his pen has been thought to be discovered; as likewise in criticisms on the writings of De Pradt, Guizot, &c. M. Gentz is, undoubtedly, one of the most prominent literary politicians of the present day. He has certainly great abilities, but his success has been unexampled in the line which he has adopted.

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 66½ degrees, and how the axis, by remaining parallel to itself in all points of its path round the sun, invariably preserves this inclination.

GEOFFREY OF MONMOUTH (called, also, *Geoffrey ap Arthur*); an ecclesiastic and historian of the 12th century. According to Leland, he was educated at Monmouth, in a convent of the Benedictines, whose society he entered. He was afterwards made arch-deacon 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 Armorican 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.

GEOFFRIN, Marie Thérèse Rodet, 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 accustomed to think and judge justly. 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 favorite maxim, therefore, was "Give and forgive." From her very childhood she was of a 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 assigned to one of her friends, who was poor, an income of 1200 livres for his life time. "If you should grow richer," said she, "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, when she dismissed him, after a long conversation, with the words, "*Vous avez été charmant aujourd'hui*," addressed to her the well known and deserved compliment, "*Je ne suis qu'un instrument, madame, dont vous avez bien joué.*" "The question is often asked," says La Harpe, "whether this woman, who converses so much with wits, is herself a wit: 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 Poniatowsky, afterwards king of Poland. He apprized her of his accession to the throne with these words: "*Maman, 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, by the emperor and empress. 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 XV, Age of.*)

GEOFFROY, Julien Louis; one of the most celebrated French critics, born at Rennes, 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 contracted 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 Cato,—merely as an exercise. He offered the piece to the directors of the theatre, who received 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 Cubières Palmezeaux. Geoffroy had hitherto supported himself by giving private instruction; he now endeavored 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 honorable 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 honor Fréron'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 Mazarin, and was considered the ablest 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 15 years, he enriched it with profound and interesting articles on philosophy, morals and literature. His style is pure, 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 abbé Royou, 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 entering, under favorable auspices, on a new career, which rendered him truly celebrated. He received, for his labors, a salary of 24,000 francs. For a little more than ten years, false doctrines had introduced confusion into philosophy, morals, politics and literature; truth and sound principles seemed to have been forgotten, and appeared, when revived, like new discoveries. Criticism gained a great advantage by thus being permitted to examine into truths, which had already been investigated a hundred times, and to speak of ancient and modern literature as if neither had ever been judged before. Geoffroy investigated with sagacity, and without sparing the principles of modern 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 fecundity of his mind, that, in so narrow a subject, was never at a loss for new resources. Even if we cannot always admit his principles, we never tire of reading his observations, and the *Journal de l'Empire*, during the time that Geoffroy wrote its *Feuilleton*, 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 7 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 71 years. (See *Cours de Littérature dramatique, ou Recueil, par Ordre des Matières, des Feuilletons de Geoffroy, précédé d'une Notice historique sur sa Vie et ses Ouvrages*, 2d ed., t. I—VI, Paris, 1825.)

GEOGRAPHY (*Greek*)—description of the earth, of the condition 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. Geography, therefore, is commonly divided into mathematical,

physical and political. The two first, taken together, are also called *general geography*. Mathematical geography (q. v.) is a part of applied mathematics. Physical geography comprises, 1. geology (q. v.); 2. hydrographics, which treats of the seas (their depth, color, temperature, motion, beds, downs, cliffs, shoals, banks, bars), and of inland waters—springs (their origin, nature, temperature), streams, rivers (their sources, direction, falls, mouths, &c.), lakes; 3. meteorology, which treats of air and ether, of the different regions of the atmosphere, of the temperature of the air (limits of perpetual snow in different climates), of the motions of the air, winds, trade-winds, breezes, of meteors, &c.; 4. a description of the kingdoms of nature, comprised under zoology, botany, mineralogy; 5. anthropology, or a description of men. In political geography, the earth is considered as the abode of rational beings, according to their diffusion over the globe, and their social relations, as they are divided into larger or smaller societies. Although political geography, particularly since the time of Büsching, has been treated profoundly, yet many things have obtained a place in it, that belong exclusively to the science of statistics, which, indeed, was first reduced to a scientific form in the first half of the 18th century. It is important, however, to draw the boundary line between political geography and statistics with exactness, and to remove from the former science all that belongs solely to the latter. For, while statistics represents the individual state, as a whole connected in itself, with a perpetual regard to public law, politics and policy, because the constitution, administration and political relation of one state to the rest can only be explained with precision through the medium of those sciences, geography treats exclusively of the local relations of a country. This science describes the individual divisions, wherever it finds them; it treats of the departments, circles and provinces of states and kingdoms, and specifies the natural peculiarities of the surface, mountains, rivers, the cities, villages, the different means of subsistence and profit, and the most remarkable curiosities, always with regard to local situation. Probably the statistical remarks, in which our geographical works have abounded, have been received into them with the view to render the study of geography more attractive to youth, or to adapt the manuals and compendiums more to the wants of readers of different stations. This error in geographical manuals and compendiums, together with the continual changes in the political condition of the European states and countries, with which the geographical works, notwithstanding their rapid succession, and the repeated editions of the same, could never keep pace, induced several thinking men to propose and execute a *pure geography*, so called, in which they took the natural condition of the globe, as it is exhibited in seas, chains of mountains, and rivers, as the foundation, divided the surface of the earth according to these natural boundaries, and endeavored to produce in this manner a complete system. But although this mode of treating geography recommends itself by the simplicity of its principle, as well as by its strict exclusion of statistics, yet it is to be feared, particularly if it should become the general method in the instruction of youth, that the want of a well ordered political geography will be sensibly felt. The experiments which have hitherto been made, are not sufficient for the establishment of the system. It is evident that political geography cannot be the same in all ages; it is divided, with respect to history, into ancient, middle and modern. Ancient geography, in its widest sense, comprises not only the representation of the condition of the earth and its inhabitants, historically known, from the first creditable historical accounts, to the overthrow of the Roman empire in the West, but also the single traces of information of this kind, which may be found in the preceding ages. It extends to all the ancient nations. A part of it—the biblical geography—necessary to a learned exegesis of the Bible, has principally been cultivated by Bochart, Michaelis, Rosenmüller, J. Schulthess, &c. To these works may be added, Richard Palmer's Bible Atlas, or, Sacred Geography delineated, in 26 small maps, Lond. 1823. Middle geography, which commences with the downfall of the western Roman empire, reaches to the discovery of America (from 476 to 1492). Modern geography comprises the period from the discovery of America to the present time. In the history of geography, the following periods may be fixed: 1. The mythical period, from the remotest times of tradition to Herodotus: the sources of our information, respecting this period, are the writings of Moses, Homer and Hesiod. Most of the events, that fall in this period, are wrapped in darkness; the accounts are few, and more of a chorographical

than a geographical nature. 2. The period in which the detached accounts were collected, from Herodotus to Eratosthenes, 270 years B. C. Hanno, Scylax, Pytheas, Aristotle, Dicæarchus, furnish interesting accounts of different countries. 3. Systematical period, from Eratosthenes to Claudius Ptolemy, A. D. 161. Polybius, Hipparchus, Artemidorus, Posidonius, Strabo, Dionysius Periegetes, Pomponius Mela and Pliny belong to it. 4. Geometrical period, from Ptolemy to Copernicus, A. D. 1520. The longitude and latitude of places now become fixed. Here we may distinguish (*a*) the times before the Arabians (sources, Pausanias, Marcianus, Agathemerus, Peutingerian table, Cosmas); (*b*) times from the Arabians, from A. D. 800 (sources, Al-Marun, Abu Ischak, Scherif Edrisi, Nasir Eddin, Abulfeda, Ulugh Begh; the sole Christian geographer is Guido of Ravenna). 5. Scientific period, from Copernicus to our times. Now we find more exact astronomical estimates, accurate accounts of travels by land and by water, more trustworthy and systematic topographies, more precise measurements of countries, and the measures given in square miles, besides scientific geographical systems and compendiums. In this period, the first attempt has also been made, with some success, towards a systematical geography of the ancient world. Much more, however, has been done in these times for the ancient than the middle geography. Christopher Cellarius here led the way. His work first appeared at Leipsic, in 1686, 12mo.—*Geographia antiqua ad veterum Historicorum faciliorem Explicationem apparata;* revised: *Notitia, orbis antiqui*, 2 vol. 4to., Leipsic, 1701. The latest edition appeared in 1773. After him, John Dav. Köhler wrote an Introduction to Ancient and Middle Geography, with 37 maps, in 3 vols. (Nuremburg, 1730). The Manual of Ancient Geography, by d'Anville, in 5 vols., was revised and enriched with very valuable additions, by several German scholars (Nuremberg, 1800, et seq., 12 maps). Conrad Mannert wrote a valuable geography of the Greeks and Romans, drawn from their writings, in 8 parts (the 2 first have appeared in a new, entirely revised, edition), 1788—1820. Valuable researches on subjects of ancient geography are contained in Heeren's Ideas on the Policy, Intercourse and Commerce of the principal Nations of the ancient World (4th edition, in the collection of his works, the 10—14 vol., Göttingen, 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* (Nuremberg, 1819, et seq.) is better, and for schools, Kärcher's *Orbis Terrarum antiquus et Europa Medii Ævi*, 23 sheets, Carlsruhe, 1824 (epitomized under the title *Atlas Minor*, in 9 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 Sprengel's History of the most important geographical Discoveries, until the Arrival of the Portuguese in Japan (2d edit., Halle, 1792). A work on the geography of the middle ages, written with critical and extensive knowledge, is still wanting; for Christopher Junker's Introduction to the Geography of the Middle Ages (Jena, 1712, 4to.) renders that want but the more sensible. For comparative geography, the works of Gosselin and Mentelle are of value. Modern geography, though in earlier works very unsatisfactorily treated, and though its foundation was so uncertain, gained much, in the first half of the 18th century, by Hübner's Complete System of Geography, which ran through many editions; as also by Hager's geographical writings, and the New European Geography of States and Travels—a work compiled with great diligence, in 16 vols. (Leipsic, 1750, et seq.). But the first foundation of a scientific system of geography was laid by Ant. Fred. Büsching, whose New Description of the Globe appeared first in Hamburg, 1754. The 8th edition of this classical work was published in 1787, and contains, in the whole, 11 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 Rühs, that of America (incomplete), in 7 vols., by 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, Bruns and Canzler, but remain unfinished. The compendiums of Gatterer—Abridgement of Geography (Göttingen, 1772), and Short Introduction

to Geography (Göttingen, 1789; new edit. 1793)—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 2 vols. (Leipsic, 1808), and in a 5th edition (Leipsic, 1825), 3 vols. (but since the 2d edition, under the altered title, Manual of Geography and Statistics). The epitome of this work, for the use of elementary schools, appeared, in a 14th edition, in 1825. A valuable compendium, of which the 11th edition appeared in 1827 (Ilmenau), 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), 23 vols., combines geography and statistics, is executed with care, and is intended to supply the place of Büsching. No other nation possesses, as yet, a similar work of such extent and completeness. Most of the manuals, as well as compendiums, 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 *Gea* (Berlin, 1808), which, in 1811, appeared in a second edition, with the title *Gæa*, an Essay towards a scientific Geography; by Kaiser, by Stein, by Hommeyer, by Kunz, &c. Ch. Ritter'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 Geogr. Ephemerides), to the year 1827, 21 vols.; *Länder und Völkerkunde* (Description of Countries and Nations, Weimar, in 24 vols., not continued); *Bibliothek der neuesten Reisebeschreibungen* (Library of the latest Travels), until 1826, 43 vols.; *Journal des Voyages, Découvertes et Navigations modernes*, published by Verneux, in Paris (in 1824 appeared the 66th series); and similar collections; for instance, the *Globus*, by Streit and Cannabich, and *Hertha*, by Berghaus and Hoffmann, Stuttgart, since 1825. Hassel's General Geographic-Statistical Dictionary, in 2 vols. (Weimar, 1817), and Stein's Gazette, Post and Mercantile Dictionary, in 4 vols., with additions (Leipsic, 1818 et seq.), 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, and many others. Among the French works, the *Dictionnaire Géographique Universel*, by Beudant Billard, Douaix, Dubréna, Eyries, A. v. Humboldt, &c. (Paris, 1824 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 1825), deserve honorable mention. Van der Meelen'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 travellers, the French and German works of Reichard, *Guide des Voyageurs en Europe*, and *Passagier auf der Reise in Deutschland, in der Schweitz, zu Paris und Petersburg* (Traveller on a Tour through Germany and Switzerland, to Paris and Petersburg), are the most distinguished, and have run through many editions. (For further information, see the article *Gazetteer*.)

Geology is the doctrine or science of the structure of the earth, or terraqueous globe, and of the substances which compose it; or the science of the compound minerals or aggregate substances which compose the earth, the relations which the several constituent masses bear to each other, their formation, structure, position, and direction. To those persons who have never thought upon this subject, the irregular yet graceful aspect of the earth, would seem to awaken no further idea, than that it was a mass of rocks, and clays, and sands, without order and design. Those who have been to the sea shore, where the rocks have been worn down to mural escarpments, will have perceived the beach to be covered with shingles, or pebbles triturated against each other, and thus divested of the angular form which they possessed when first broken off from the original mass, when they were, as geologists technically say, *in place*. Every one has found similar rounded pebbles on the dry land, far above the level of the sea. In many instances, they are thus found thousands of feet above the marine level. Ingenious minds will inquire, what circumstances could have fractured rocks, rounded their frag-

ments, and distributed them into such dissimilar situations. This is one of the first and most important lessons in geology; and the solution of the inquiry will be found to be the key to similar phenomena, in situations still more extraordinary, where the lower puddingstones and breccias present themselves. To trace these rounded pebbles to their native rocks—for, on the dry land, they frequently exist at immense distances from their beds—it will be necessary to have some slight knowledge of minerals. Rocks are very nearly related, nineteen twentieths of the mineral parts of the earth being composed of five substances:—silex, the constituent of flint and sand; alumine, the constituent of clay; lime, the constituent of chalk, gypsum, and all calcareous beds; magnesia, and iron. There are other mineral substances found in the solid parts of the earth, but they are usually in veins, and are more especial objects of attention to the mineralogist. Feldspar, mica, hornblende, &c., besides being found in veins, are found in the unstratified rocks; and some knowledge of them is essential to the student. The next question he asks himself is, whether the whole substance of the planet is one solid mass of rocks and strata, resembling those he finds near the surface. The existence of volcanic action, through every part of the known world, either by the eruptions of active volcanoes, or by earthquakes, is an assurance that there must be vast cavities in the globe, where igneous action is fiercely at work, and of which these volcanoes are the safety-valves. Of the extent of these cavities, and of the depth at which they are seated, some opinion can be formed, from the great distances at which particular earthquakes have been felt. That of Lisbon, in 1755, not only affected the lakes and springs in every part of Europe, but was sensibly felt in North America. That of New Madrid, in 1811, shook the valley of the Mississippi, for several hundred miles. Such disturbances are to be considered as the effect of the resistance, which the solid parts of the earth oppose to the expansive power striving in those profound cavities. We then refer to this force many phenomena of the science, and at length comprehend what otherwise would be incomprehensible. For instance, when we are told that the crust of the earth is composed of a series of rocky beds, from the inferior granite up to the uppermost tertiary bed, lying above the chalk; and all, being more than a hundred in number, differing from each other, in many particulars, both as to the relative proportion of the simple minerals of which they are composed, and the organic bodies imbedded in them,—we are at first incredulous; for our own examinations show that the tops of the highest mountains, and the beds of the lowest surfaces, are both formed of granite, or gneiss, or slate, the lowest order of rocks we are acquainted with. Another step or two, and our eyes begin to open. When we know that volcanic matter has been, at all times, poured from beneath these inferior rocks; that the volcanic fires of the Cordilleras, and of Auvergne in France, have equally come through the granite; above all, when we find those superior beds of the series, which lie above the granite, reposing, at high inclinations, upon the flanks of those granite mountains,—the whole truth flashes upon us, and we clearly understand, that these mountains have once existed at lower levels, and that they have been forced up through the superincumbent formations, by the expansive power forever struggling in the interior of the globe. It is thus we become acquainted with the existence of a power capable of the mightiest mechanical exertions. If earthquakes, in our own time, rend the earth, dislocate its solid parts, and engulf portions of it in the chasms they create, it may have been so at a period coëval with the existence of the planet. If the volcano of Skapta Jokul, in Iceland, could, in 1783, pour out streams of lava sufficiently hot and extensive, not only to melt down the ancient lavas, but to more than fill the gorge of a river two hundred feet wide and six hundred feet deep, damming up the streams, and inundating the whole country, the same may have taken place in ancient times. If, in 1822, the coast of Chile was raised five feet, for the distance of one hundred miles, by a single volcanic paroxysm, we can conceive of continents and mountain chains being raised to their present elevation, by repeated shocks, in ancient times. Finally, if, at the present day, springs, peculiar to volcanic countries, deposit silex, bitumen, lime and other substances, so it may always have been. These probabilities are strengthened by the disturbed state of the transition rocks, the extent of the trap formations, the elevation of Italy, the Alps, and many other regions, and the ancient beds of quartz, pitchstone, primitive limestone and oolites, which approach so near to the modern Travertinos of Italy. Wherever volcanic waters are, there we find calcareous and other mineral substances, and under cir-

cumstances warranting the opinion, that they have, at all times, derived their origin from the central and unsearchable parts of the globe. When we look, too, at the great extent of the calcareous formations, especially the transition and carboniferous limestones, found in almost every part of the globe, analogous in geological position, in mineral composition, in organic accompaniments; we can, at any rate, conceive of a source from whence they may have been derived, and which was in operation upon a mightier scale, in ancient periods, than at this day. And from what other quarter, it may be asked, could they be derived? When we see the gneiss uniformly, in the most distant parts of the earth, superimposed upon the granite, the calcareous beds always lying above the gneiss, and the other rocks of the series invariably following each other, in an order as regular as that of the letters of the alphabet; we cannot but think of this constancy of succession, as the result of the law of the structure of the planet; as being *part of a great design, appropriate to the developement of a great end.* It is in vain we are told that, if we will allow time, causes now in action will appear powerful enough to have brought the structure of the earth to the condition it is now in. That mountains may be worn down by the continued action of external causes, and that Deltas may be formed of their ruins, is conceded; but, we would ask, How did all those calcareous masses, so worn down, and whose ruins are supposed to exist in the extensive floors we have alluded to—how did they first come into existence? It appears easier to believe, that the immense calcareous floors that underlie this continent, from almost the north pole to the Arkansas, have been quietly and horizontally deposited from central flows, than that they were thrown up into the form of mountains, to be afterwards placed where we find them, by aqueous degradations. Time, it is true, is a cheap commodity with geologists; but, if we are to take, as a measure of the time necessary for the production of all the strata in the geological series, the insignificant progress Deltas have made during the last six thousand years, by causes now in action, we shall have to borrow largely from eternity. The theory of Werner supposed the inferior rocks to have been separated from an aqueous mixture by chemical deposition, and that the earth became thus encircled by a stony mass. But, although Werner was a skilful mineralogist, he was but a cabinet geologist. The nature of the inferior rocks is now better known. The intrusive character of the veins of granite, found traversing the granite itself; the passage of all the varieties of the inferior rocks into each other; the connexion between granite and sienite, inferring an identity of origin, and many other circumstances, have produced an entire revolution of opinion, in the minds of most practical geologists. The existence of marine fossils, at such great elevations above the level of the sea, is another proof of the subterranean birth of continents and mountains. In innumerable instances, we find marine shells converted into stone, without impairing the most delicate spines, and under such circumstances as to assure us, that what is now the tops of mountains was once the bottom of the sea; that here these testacea lived and died, passed tranquilly into the petrified state, and were subsequently raised from the deep. But it is the distribution of the animal, as well as vegetable organizations, through the geological series of rocks, that awakens in us the most profound reflections. Here light first breaks in upon us, in an unequivocal manner, and we begin to consider these various phenomena as showing successive changes from a less perfect to a more perfect state of things. It is well known, that these organized bodies are distributed through an immense number of floors, rising one above the other in the series, from the transition rocks to the highest tertiary. Each of these floors has been, in its time, uppermost in the series, and has been covered by deposits, derived from geological causes, that cannot here be inquired into. If, as our accredited records show, the present surface of the earth has suffered no material change during the last four thousand years, what immense periods of time must have elapsed, during the successive formation of each of the floors, and the existence of the organized bodies which inhabited them! In this amount of time is not included that period belonging to the formation of the rocks inferior to the transition. Those floors may be considered as the pages of the history of nature. It has been remarked, that volcanic waters are strongly impregnated with calcareous matter; and in the present seas where this occurs, we find calcareous rocks forming by the coralline animal. There are few calcareous strata, in which some species or other of these zoöphytes are not present. We often find the transition rocks composed of masses of these simple animals, the inferior species of which have not the gift of

locomotion, nor any apparent nervous system. Their organs, which surround a common axis in the simplest manner, appear to infer no higher sense than conservative functions. Animals of the articulated class, to which insects and worms belong, and which rank somewhat higher in zoology on account of their nervous structure and free motions, are rarely met with in the transition rocks. Nor is it surprising; for the lower species, being without a crustaceous covering, could not be expected to take a mineral transmutation, as to form. The trilobite, however, is a characteristic fossil of the transition slates and limestones. The molluscous animals are a higher class of invertebrated animals, with a circulating system and organs of respiration. All animals protected by one or two shells, are of this class. A few species of bivalves are met with in the transition, but the full developement of them is found much higher in the secondary rocks; and in the tertiary, or latest geological periods, there are numerous species analogous to those in the modern seas, which is not the case in the older strata, whose inhabitants are all extinct species, with a rare exception or two. These animals appear to have more varied powers, than those simply applied to conservative purposes. They appear to possess the faculty of constructing their testaceous coverings with a view to offence and defence; to make the edges of their shells acute or blunt, as the hard or soft nature of the beds they inhabit, or the nature of their locomotion, may require. The next order of animals is the vertebrated class, or those having internal skeletons, with a receptacle for the brain and marrow. The various gradations by which these rise up to man, inclusive, are found here. We regard that animal as more perfect than another, whose organization admits of the exercise and enjoyment of more various functions. The velocity of the fish enables it to seek its food in different situations, in a much shorter time than the crab or lobster. There are no evidences of vertebrated animals in the lowest transition rocks. Scales of fish are said to have been found in the old red sandstone, which, by English geologists, is counted amongst the secondary. Nor is it until we rise to the carboniferous limestone, that any evidence of Saurian animals is mentioned, and that in a solitary instance. Much higher in the series, we find them in great abundance, especially in the lias, between the deposition of which and the carboniferous limestone, a very long period must have elapsed. Neither is it pretended, that there is any evidence of marine mammalia, or of terrestrial quadrupeds, before the oolitic series; and, even then, the instances are of such a doubtful character, as to rather confirm the doctrine of progressive developement, than to weaken it. As we approach the top of the geological series, we find abundance of both marine and terrestrial mammalia. Together with the remains of the pachydermatous animals, we find the bones of the ox and the horse, as if just preceding man, to whom they are so inestimably useful, buried in caves and sedimentary deposits, where the remains of man, or even of any quadrumanous animal, have never been found. In all these things, there seems (to use the language of the late sir Humphrey Davy, in his Consolations in Travel) "a gradual approach to the present system of things." (For a further account of the general relations of the earth, and of its surface, we refer to the articles *Earth*, *Mountains*, *Sea*, *Air*, *Rivers*, *Glaciers*, *Atmosphere*, *Earthquakes*, *Volcanoes*, &c.)

We shall now proceed to some more particular remarks on the component parts of the earth's crust, or covering. This consists chiefly of various kinds of rock and mountain masses, more or less extensive. Rocks may be divided into homogeneous, apparently homogeneous, heterogeneous or compound fragments, loose mountain rocks, and coal strata. Homogeneous rocks, as quartz, limestone, gypsum, &c., belong to the simple mineral species. In the apparently homogeneous rocks, several species are united in such minute particles, and with so intimate a connexion, that the parts cannot be distinguished by the eye; as in the case of basalt, &c. In the heterogeneous rocks, the component parts are more or less easily distinguished, according to circumstances; as, for example, the quartz, feldspar, and mica, in granite. Rocks consisting of confused fragments, as puddingstone, breccia, &c., are made up of variously formed and mingled pieces of stones, held together by means of a uniform paste, like themselves in hardness, but generally of a different composition. Loose stones and fine gravel, sand and loam, are all produced by the mechanical division of large masses, by their decomposition, or disintegration from the action of air, moisture, &c., or from the continued action of streams of water, torrents, &c. A particular place in the mineral kingdom belongs to the species of minerals produced by the de-

struction of some portion of the vegetable world, constituting the various species of coal. In regard to structure, rocks are crystalline granular, slaty, compact, porphyritic, and amygdaloidal. The crystalline granular rocks consist of small crystalline or angular parts, fixed together by the process of common crystallization. In slaty rocks, the mass splits into thin plates or layers. Rocks are called *compact*, of which all the particles wear a uniform appearance, and which assume no particular forms. Porphyritic rocks present a compact and homogeneous basis, in which are imbedded other minerals, in the form of insulated crystals or grains. Some rocks contain roundish or irregular cavities, which are either empty, or in part or wholly filled with mineral substances of a different species from the mass enclosing them. These rocks are called *amygdaloidal*. Many rocks contain accidental substances, besides their regular constituent parts; various sorts pass into each other by gradual 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 clefts, 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 found distinctly stratified; some partially so, and some not at all. Sometimes one stratum rests upon another, and is itself covered by a third. In this case, the second is called the *subjacent*, or inferior, and the third the *superincumbent*, or superior, stratum. The thickness of the strata is very unequal. The extension of strata in a particular line, is termed their *direction*, and is ascertained by means of the compass. Their deviation from a true level, is called their *dip*, and is estimated by degrees of a circle, and according to the four cardinal points—like the direction and dip of the magnetic needle. The portion of the strata above the surface of the earth, is called their *visible end*, or *extremity*. Among the most interesting and important of the phenomena connected with stratification, are the breaks which not unfrequently occur in copper, coal, and other mines, where one rock seems to have slipped by the adjoining one, or to have changed its place, so that the metallic or other vein running through them both, is interrupted, and the continuation of it is thrown higher or lower than the first part. These are technically called *shifts*. Rocks are divided again, according to their more or less regular form,—in which respect they are called *columnar*, *tabular*, *spherical*, &c. By the *position* of rocks is understood their place in the general arrangement of the rocky masses which form the external covering of the earth. The position of rocks is either *conformable*, *unconformable*, or *overlying*. The position of rocks is said to be *conformable*, when the edges of the strata of a rock lying upon another, present the same appearance and arrangement as those of the one upon which it rests. It is *unconformable*, when the rocks which lie upon older formations present a different appearance of strata from the other, they being different in dip or direction. The position is *overlying*, when the strata of the superior rock conceal from the view the position of the rock below. *Alternating position* is when two or more kinds of rocks lie upon each other in repeated succession, and thereby indicate a contemporaneous origin. *Parallel formations* are when different rocks alternately take each the place of the other. The particular situation of minerals, their course and position, which constitute the basis of all mining operations, are of great importance. The *veins* of minerals are the tabular or flat spaces, either in part or entirely filled with different mineral substances, by which masses of rock are intersected, and for the most part in a direction forming a greater or less angle with the direction of the strata of rock. These courses or veins of minerals follow straight lines of direction, or they are bent and curved in various directions and forms. The mineral which fills the vein is more or less different from the rock in which it occurs, according to circumstances, or is, at least, distinguishable from it. The direction of the vein is estimated by the angle which it forms with the meridian; its inclination, by its dip, or the angle it forms with the horizon. Some veins have no particular direction or dip, but extend in all directions. The rock upon which the vein lies, is called the *lying*, and the one which covers it, the *hanging*, rock. The vein terminates at its *outgoing* upon the surface of the mountain or earth; the other end tends towards the interior of the earth. The thickness of the vein is estimated by the distance between the underlying and the overhanging rock. A vein

is sometimes compressed, or diminishes in thickness; it sometimes stops in the direction of its length; and it is said to be lost, when it splits into several small veins. The vein consists either of one or of several species of minerals; it contains cavities of various form and size, either filled with minerals or having their sides encrusted, or covered by crystals of various kinds, which cavities 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 vicinity; 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;* and mountain masses, intersected by great numbers of small veins and deposits, are called *floors*. *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 petrifactions, 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 petrifactions, 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 a similar character; and that they differ 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.

Divisions of Time in the Formation of Mountains, ana 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 *primitive*, *transition*, *secondary* or *floetz* rocks, *alluvion* and *volcanic* rocks; or, according to a more recent division, into *primary* or *primitive*, *secondary*, *tertiary*, *volcanic*, *diluvial* and *alluvial* deposits—comprehending all rocks and earths. *Primitive rocks* are crystalline in structure, and are remarkable for the great purity and firm adhesion of their component parts. Siliceous and argillaceous earths form the chief ingredients in their composition, and they are remarkable for the absence of all petrifactions to testify the previous existence of organic beings. When both classes occur 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 primitive rocks are always lowest, yet, when secondary rocks are absent, the primitive often appear at the surface of the earth, and do, in fact, constitute the summits of the greater part of the highest mountains. When primitive rocks are stratified, the strata are seldom horizontal: on the contrary, they are often highly inclined, and sometimes nearly or quite vertical. But 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 in the growth of most rocks of this class, 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, clay, earth, &c., are called *diluvial*, 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; *alluvial*, when they are limited in extent, and may be ascribed to the operation of causes now in action, as the sea, rivers, rains, &c., &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; and older and more recent formations of 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 contradistinction 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 coëxtensive with the surface of the earth, and which occurred previously to the earth's assuming its present form; by which the order of things was wholly changed, and all creatures living at each 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 seem, also, to render it as probable, 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 size of those lost races of animals, and 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 who then inhabited this earth, as we now do; but they, unfortunately, give us no distinct account of the events, which terminated in a change so destructive 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 now exist, and show that the relations 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 flattened 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. Upon the question as to the cause of this fluid state, however, opinions are divided. Some geologists, at the head of whom is Werner (whose hypothesis has already been alluded to, in the general remarks, at the beginning of this article), are of opinion that the substances composing the primitive rocks were penetrated by and dissolved in water; while others have believed that the earth was, at that period, of a much higher temperature, and that its materials were then melted, or existed at a glowing or red heat. These two have been called the *Neptunian* and *Vulcanian* hypotheses; the last of which has always counted the most numerous adherents. Buffon's conjecture, that the earth was a portion of the sun struck off by a comet, involves a

mathematical absurdity, and has found no supporters. La Place advanced the idea, that the sun formerly possessed a much higher temperature than at present; that the gaseous elements, or parts of it, extended beyond the orbits of the planets belonging at present to the solar system; and that, as this gaseous atmosphere became cooler, its particles were attracted by each other, and collected into spherical masses, at different distances from the sun, thus forming the planets, which became solid as they cooled. According to this hypothesis, the earth was once so hot, that it had a gaseous form. Hutton, who has taken great pains to support the Vulcanian hypothesis, supposed that the internal part of the earth was fluid, or melted by heat; that this subterranean fire, as well as the water of the atmosphere, was concerned in all the past revolutions in the earth's composition, and is constantly producing new ones, which succeed each other at long intervals; and that, thus, what is now land was once the bottom of the sea, of which, when exposed, lands and mountains were formed. Werner objected to the Vulcanian hypothesis, that our primitive mountains and rocks often present appearances, which are quite inconsistent with the supposition of a glowing heat or melting temperature,—as the things therein contained could not have existed at such a temperature. Water, for instance, is one of their essential elements. These appearances could not have been presented by a melted mass, which was at once cooled. Hutton, on the other hand, has attempted to answer these objections, by referring to experiments, in which it was found that substances, which were decomposed when subjected to a melting heat, under the common pressure of the atmosphere, would preserve their composition unchanged at the same temperature, if at the same time subjected to a very great pressure. This was found to be the case, for example, with the carbonate of lime, which was found to retain its carbonic acid, when fused under such circumstances. This is not, however, the place to clear up all the difficulties and objections, to which both these hypotheses are found to be open. Suffice it to say, that neither appears to be reconcilable with our present knowledge and opinions. The supporters of the one theory often laugh at the other: and while, on the one hand, the organic remains found in the upper strata of the earth seem quite inconsistent with a formation by fire, and very clearly point out a watery medium as their original matrix, so, on the other hand, the disciples of Werner have failed to take notice, that the originally fluid state of the whole globe, previous to the existence of living creatures, and to these revolutions in the state and structure of the earth, is unaccounted for by their theory. It is, for instance, wholly at variance with our present knowledge of the solvent powers of water, to suppose that the elements of granite rock were ever dissolved in it. And to suppose that, some thousands of years since, water had other powers of solution, is an absurdity; for, as the essence of all bodies lies in their properties, it would be equivalent to saying that water was not then water, or that the constituent parts of mountains were not then the same as now. It is only obscuring a dark subject, and not explaining it. But, if we suppose the elements of the earth as existing, and as brought in contact, but not combined, when this combination took place, the usual attendant of such phenomena, fire, would be exhibited in its most intense form. The result of the combination would be, a spherical fluid mass—a drop, so to say, of immense magnitude, of very high temperature, which cools slowly by radiation, and thus affords an opportunity to the melted elements of matter to assume a more or less crystalline form while cooling. But who is competent to form opinions upon the original mode of the earth's formation? Human understanding has its limits, and within these should it find its occupation. But we may be permitted to say, that, considering them merely as theories, the Vulcanian certainly involves the fewest inconsistencies, with the present state of our knowledge upon these subjects. (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 Leonhard'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*, 1830; Buckland's *Reliquiæ Diluvianæ*, 2 vols. 4to., London, 1824, 1828.)

Geomancy is called, by Cotgrave, *divination made by points and circles in the earth.* Sparry, in his translation of Cattan's Geomancie (written about the middle of the 16th 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 starres and planets of heaven, called the science of the earth, because in times past it was made on it, as we will hereafter declare. And thus every pricke signifieth a starre, and every line an element, and every figure the foure quarters of the worlde, 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 mean, that is to say, participating of two, which is alquemy. Geomancie is called of *gy*, a Greeke worde which signifieth earth, and *mancié*, which is to say, knowledge. Or, defining it more properly, it is derived of *gyos* and *magos*, which signifieth knowledge of earthly things by the power of the superior bodies, of the foure elements, the seaven planets, and of the twelve signes of heaven. And this arte may be made on the earth or on white paper, or uppon any other thing whereon it may commodiously be done, so that the prickes and lines may be knowen. The beginning and original of this arte 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 fowle, raine or winde." One of the oldest writers on geomancy is said to be Philo Judæus. Cornelius Agrippa, 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 later years, *De Vanitate Scientiarum:* —"I have written also a certain book of geomancie, far differing from the other, but no lesse superstitious, false, or, if you lyst, I wyll say, lying." (Sandford's translation, 1575.) In a subsequent chapter (36), he distinguishes two sorts of geomancy:—"All they which write hereof do affirme, that geomancie is the daughter of astrologie, whereof we have spoken in arithmeticke, which fashioneth certain figures attributed to the heavenly signes by which they divine. There is also another kind of geomancie 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 itselfe, or els of inflammation and heate, or of thundrings that happen, the whiche also is grounded upon vaine superstition of astrologie, as that which observeth houses, the newe moones, the rising and forme of the starres." This science was flourishing in the days of Chaucer, and was deeply cultivated by Dryden, at the time of his *rifaccimento* of the Knight's Tale. Cattan, 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 Ferte, 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 Trivulfee (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 the count of Novelaire was 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 magicke, called of many worthy men the daughter of astrologie, and the abbreviation thereof." There is a tract on geomancy by Bartolomeo Cocle, who styles himself *Filosofo integerrimo* (Venice, 1550). Oughtred, who died in 1660, appears 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, *planimetry*, occupied with planes or surfaces, and *stereometry*, 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 us to 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 Chaldæans 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 Phœnician, 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. Aristæus, 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 16th 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. Carallieri opened the path to the higher geometry of infinites; and, in 1684, 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 Ceuln, 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 Mongé. 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. Legendre, above-mentioned.

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 ¾ of a mile to 4 miles in width. The whole length is 36 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 12 to 20 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 recedes from the lake with a gentle acclivity for a few rods, and then, with a bolder ascent, to an elevation of from 500 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 14 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 army of 15,000 men, for an attack on Ticonderoga. Black mountain, on the eastern side of the lake, 18 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 effected the deliverance of a king's daughter. He is commonly represented on horseback, in full armor, 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 or the Mussulman. This saint is the protector and patron of the English 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 succeeded to the electorate, and in this succession was 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 recognised the electoral dignity in the house of Lunenburg, 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 54th year of his age. On the accession of George I, he was thrown into the arms of the whigs, 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 continued, however, so great, that the whigs were driven into some unpopular measures, with a view to support it, the most indefensible of which was the septennial act, extending the duration of parliament from three years to seven. The king, who probably considered 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. This involved him in a quarrel with Charles XII, who, in conjunction with the czar Peter, projected an invasion of Scotland in favor 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 celebrated 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 naval expedition into 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 effected by the mediation of Great Britain. In 1722, a new conspiracy against the government was discovered, which led to the apprehension of several persons, among whom was the celebrated Atterbury, bishop of Rochester, who was exiled for life. In 1725, a treaty between Spain and the emperor 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 a paralytic attack, of which he died at Osnaburg, June 11, 1727, in the 68th year of his age, and the 13th of his reign. George I was plain and simple in his taste and appearance; he possessed much natural prudence and good sense, and his manage-

ment of his German dominions was able. Having put away his wife several years before his death, he had female favorites, but was not governed by them.

George Augustus II, king of Great Britain, son of George I, was born in 1683. He married, in 1703, Wilhelmina Dorothea Carolina of Brandenburg-Anspach, and came to England with his father at the accession of the latter, and was created prince of Wales. He was made regent during 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 *Great Britain*.) On the death of the emperor Charles VI, France and other powers endeavored to strip his daughter Maria Theresa of her inheritance, which conduct induced George II, as guarantee of the pragmatic sanction, to declare in her favor. An English army was accordingly sent to the continent, and strengthened by a body of Hanoverians in British pay. The king himself 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 Fontenoi in 1744, and the French remained ascendant in Flanders during the rest of the war. In 1745, the young Pretender made a descent on the northern part of the island, and took possession of Edinburgh. Having defeated the royal troops at Preston Pans, he entered England; but, although he penetrated without opposition as far as Derby, the people showed but little inclination to his cause. The arrival of the duke of Cumberland with several regiments 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 Frederic, 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 II died suddenly, Oct. 25, 1760, in the 77th year of his age, and 33d of his reign. George II was a prince of very moderate abilities, parsimonious, 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 1751, 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 prince of Wales, ascended the throne on the demise of his grandfather, George II, Oct. 25, 1760, being then in his 23d 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 favorable to the anticipations formed of

the conduct of a young prince of unspotted 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 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 outvoted in the cabinet on the subject of a war with Spain. The marriage of the king with the princess Gharlotte Sophia of Mecklenburg-Strelitz (a union which in its result operated materially on 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 Nov. 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 favorable 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 successor, and regent of the kingdom. The attempt 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 Bristol. The same year 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 subsequently, if disapproved by both houses of parliament. In 1773, the discontents 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, and Indian policy of the Pitt cabinet; as also to the transactions connected with the Irish rebellion. George III was immovable in his opposition to the demands of the Irish Catholics, and, seconded 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 insanity of the monarch renders 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, sound, but not enlarged understanding, he acted upon his convictions with sincerity. His tastes and amusements were plain and practical. Literature and the fine arts engrossed but a small share of his attention, and hunting, agriculture, mechanical contrivances, and domestic intercourse, seem to have chiefly occupied his leisure. Religious, moral, and in the highest degree temperate, the decorum of his private life was always exemplary. His deportment as a father and a husband, 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, Frederic Augustus; king of England and Hanover, son of George III and the princess 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 1815. He was educated, with much strictness, by doctor Markham, subsequently archbishop of York, 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 kingdom; the idol of the women and of the people, although 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 Fitzherbert, a Catholic, and the opinion was very prevalent that a marriage actually took place between the parties. This connexion displeased the royal family and the nation. 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 being at this time £50,000. The refusal of his father to assist him, compelled him to adopt a system of retrenchment, 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 malady of the king (1788) having raised the question of a regency, Pitt proposed the limitation 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, on which occasion his income was increased to £125,000 sterling. When Napoleon threatened England 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 this subject, refused his request. He took the oath 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 services, nor make any appointments for life, &c. As he did not constitute the ministry 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, declared himself indebted, for his crown, under God, to the prince of Wales. Soon after that event, he received the emperor Alexander, the king of Prussia, and other foreign princes, in London, with great splendor. July 14, 1815, Napoleon addressed to the regent his petition for an asylum. "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 precedents than the stories of Plutarch. August 12, 1815, he founded the Hanoverian civil and military order of the Guelf, and (1818) the English order of St. Patrick. To the holy alliance he gave his assent only in his individual character, October 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 reëstablished the old feudal estates. In March, 1816, he informed parliament of the intended marriage of his daughter, Charlotte, to prince Leopold of Saxe-Coburg, 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 ambassadors at the congress of Aix-la-Chapelle subscribed to the declaration of November 19. France and England, at this congress, were appointed to compel the Barbary states to observe the law of nations towards Europe. The king forbade any of his subjects 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 ferments; especially when the magistracy of Manchester, August 16, 1819, brought out the military against an assemblage of people, met to discuss the question of parliamentary reform, on which occasion many lives were lost. The distresses of the poor, after a 23 years' war, which in addition to the prodigious amount raised by taxes during its continuance, had increased the national debt to about £900,000,000 sterling, could only be gradually relieved, and strong measures were adopted for restraining the malcontents, especially in Ireland, where bloody commotions 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. The foreign trade and possessions of the kingdom, meanwhile, were increasing. (See *Great Britain*, and *Hindostan*.) George IV, who succeeded his father, January 29, 1820, was crowned in Westminster abbey, July 19, 1821, with the ancient ceremonies; and, to increase the splendor of the occasion, extraordinary ambassadors were sent from the other powers of Europe. A process was subsequently 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 afterwards, the king undertook his long contemplated journey to Ireland, at which time he heard of the queen's death, August 7, 1821. On this occasion, the Orangemen and the Catholics did not appear to greet the monarch. After a succession of feasts, George left Dublin, September 3, and returned to London. September 20 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 (q. v.), 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 event in the latter part of 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 is 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 heiress presumptive to the throne of England.

George Cadoudal, 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 Granville, was made an officer. He distinguished himself by

his strength and courage. After the reverses at Mans and Savany, 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 endeavored 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. His division was most frequently engaged with the republicans, and was sent to receive a supply of muskets and cannons, which had been landed on the banks of the Vilaine, by the English. He, for a long time, refused the proposals of peace offered by the consul Bonaparte; but, after the engagements of Grandchamp and Elven (January 25 and 26, 1800), finding that all the chiefs, Frotte only excepted, had submitted to the republic, he resolved to conclude peace. February 9, knowing that general Brune was reconnoitring, he went to meet him, 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 ratified by the consuls, he went to Paris, on the invitation of Bonaparte, who endeavored 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 favorable reception from the French princes and the English 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 England, of exciting commotions in France, and assassinating the first consul. They were brought by captain Wright in a vessel belonging to the English navy. Pichegru, George and Moreau were to act as chiefs in this conspiracy, which was, however, detected and frustrated by the police. George remained concealed in the capital until March, 1804, when he was arrested near the Luxemburg, after he had driven about in a fiacre 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 endeavored 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 35 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-Noble; an 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 22 carats.

Georgetown; a post-town and port of entry, Washington county, and district of Columbia, on the north-east bank of the Potomac, about 200 miles from its mouth, and 300 from the capes of Virginia, 3 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 are two bridges. It contains a market-house, a college, a Lancastrian 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, and many of them are elegant. On the hills, near the town, there 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

8 miles below the town, a considerable part of the produce is transported to Alexandria, and exported from that place. Georgetown college is a Catholic institution, under the direction of the incorporated Catholic clergy of Maryland. It was first incorporated in 1799, and was authorized to confer degrees by act of congress in 1815. The number of students is about 150.

GEORGETOWN; a post-town, port of entry, and capital of Georgetown district, South Carolina, on the west side of Winyaw bay, at the entrance of Sampit river, 12 miles from the sea, 60 north north-east Charleston, 134 south Fayetteville; lon. 79° 29′ 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 11 feet of water.

GEORGIA; one of the U. 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; south by Florida territory, and west by Alabama. The Chatahoochee river forms the western boundary, 157 miles, to Miller's Bend. The remainder of the line runs north 10 degrees west. Georgia extends from lat. 30° 19′ 48″ to 35° N., and from lon. 81° to 86° 17′ W. It is 300 miles long from north to south, and 240 from east to west, and contains upwards of 58,000 square miles. Population in 1790, 82,000; in 1800, 162,000; in 1810, 252,432; in 1820, 340,989; in 1824, 225,048 whites, and 175,882 blacks; total 400,930. The number of counties, in 1827, was 70. Milledgeville, on the Oconee river, is the seat of government. Savannah and Augusta are the largest towns. The principal rivers are the Savannah, Ogeechee, Alatamaha, Satilla, Oakmulgee, Oconee, St. Mary's, Flint, Chatahoochee, 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. Catharine's, Sapello, St. Simon's, Jekyl and Cumberland. The land bordering on the salt-marsh is of nearly the same quality as that of the islands. In the rear of this margin, commence the pine barrens. The rivers and creeks are bordered with swamps or marsh, which, at every tide, for 15 or 20 miles from the coast, are either wholly or partially overflowed. These constitute the rice plantations. The pine barrens extend from 60 to 90 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 abounds in sublime and picturesque scenery. 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 September 30, 1830, was 247,662 bags, and from Darien 3,056 bags. The exports of rice from Savannah for the year ending September 30, 1826, were 11,455 tierces; and of tobacco, 170 hogsheads. Considerable quantities of the same articles were also exported from Darien, Brunswick and St. Mary's. The forests afford 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 mercury, in summer, rises to 90 degrees, and sometimes as high as 96, or even 100. This is true of nearly every part of the U. States. But the winters in Mississippi and Louisiana often present a few days of snow and cold, which are never equalled, in the same latitude, on the Atlantic coast. In the low country of Georgia, near the swamps, bilious complaints and fevers are very common during 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, 1830, at the expense of about $165,000. The design is to extend the canal to the Alatamaha, making its length 72 miles. The principal literary seminary in this state is Franklin college, or the university of Georgia, at Athens, which has funds to the amount of $136,000, of which $100,000 are invested in the bank of the state of Georgia, which stock the state guaranties to yield eight per cent. per annum. According to Sherwood's Gazetteer of Georgia, "there are about 80 incorporated academies in this state, 64 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; 40 counties, 30 pupils each, = 6000; in the middle section, say 7 common schools in each county, 25 counties, = 5250; total number of pupils in the academies and common schools, 14,258." The state possesses academy and poor school funds to a 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 to be vested in stocks for the same purpose. The most numerous denomination of Christians in Georgia are the Baptists. Next to these are the Methodists. 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 acquired a title to the lands, because the 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, considering the great extent of its territory. Two considerable tribes of Indians reside partly within the chartered limits of this state—the Cherokees in the northwestern 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 American 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 it is to be hoped that such a course will be pursued as shall be consistent at once with justice and humanity, with the welfare of the Cherokees, and the honor of the U. States. The following notice of them is extracted from Mr. Sherwood's Gazetteer of Georgia, published in 1827. "Within the last 20 years, 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 is 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 1277 slaves. Total, 15,060 souls. Increase in the last six years, 3563. 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. Their judges act with authority, 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 U. 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.*

* 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 amounts are procured. At the Yahoola mines, on the north side of the Blue Ridge, which is in the Cherokee nation, about 4000 hands are supposed to be employed, whose daily

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 canals. 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, *Gurgistan;* in Russian, *Grusia, Grusinia;* 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 17,638 square miles, with 390,000 inhabitants. Turkish Georgia, or Cartuel (*Zemo Kartli*), belongs to the pachalic of Tchaldir, and contains 5045 square miles, with 200,000 inhabitants: its capital is Akalzike. Separated from Russian Georgia is the Russian province Imirete or Imiretta, containing 13,370 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, Guriel, with Poti at the mouth of the river Fash (*Phasis*), and Awchasa on the south-western declivity of the Caucasus. Mingrelia and Guriel continue to be governed by Greek hereditary czars, tributary to Russia. The former czar of Georgia (*Cachetia* and *Cartalinia*), 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 Sept. 12 (24), 1801. The princes still living received a pension, and Teflis (q. v.) 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, endeavored, in the second half of the 12th century, to propagate Christianity among the mountaineers. The Greek religion, the predominating faith, is rigidly observed, with a number of ancient national superstitious customs. The Georgians are very tolerant towards other religions. Under the eparch of Georgia are 12 archbishops and bishops and 13 archimandrites. The country was, for 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 harems. Though the disposition of the people has suffered by heavy and continued oppression, valor and generosity are still traits of their character. The country is mountainous, being bounded on the north by the Caucasus, but is rich in wood, grain, cattle, silk, fruits, &c. (See Güldenstädt's *Journey to Georgia and Imiretta, with Notes*, by Klaproth, Berlin, 1815.) Major-general Chatow has published a new general map of Georgia and the adjacent parts of Persia, in 10 folio sheets, in the topographic bureau of the imperial general staff at Petersburg. The Travels of Gamba (Paris, 1826) has shed much light upon these countries.

GEORGIC (from the Greek γη and ἔργειν, 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 Festetics, of Tolna, at Kestzhely, 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 (see *Forests*) and a riding school. Gardens, fields, meadows, vineyards, forests belong to the institution, and cattle, horses, sheep, bees and silk-worms are raised.

proceeds are estimated at $10,000. The Coker creek mines have more recently been discovered. Here the particles of gold are very small, and from the defective machinery, which, as yet, 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, &c., have been procured, and where the laborers are diligent, they average one dollar a day. At these mines, also, a large number of hands is employed, and the number is rapidly increasing. These are in the Cherokee nation, within the limits of Tennessee, and are about 70 miles from Knoxville. They are on the north side of the Unicoy mountains. From the mines on the Blue Ridge, to those on the Unicoy mountains, the whole country abounds with the strongest indications of gold.

GEORGIUM SIDUS. (See *Planets.*)

GEPIDÆ; a German tribe of the family of the Goths. According to Jornandes, this name signified *indolent*, and originated 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 *Gepantæ* or *Gepidæ*, which was, at first, a term of reproach. They first lived 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 irruptions 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 off 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 Huns, &c.

GERANDO, Joseph Marie de, baron von Ramzhauser, was born at Lyons, about the year 1770. He was the son of an architect, and, from his youth, a friend of Camille Jourdan, with whom he went to Paris, in 1797. After the 18th Fructidor, his friend, who was a member of the council of 500, having been proscribed, he accompanied him to Germany, where he became intimately acquainted with German literature, and wrote a *Mémoire sur l'Art de penser*, which obtained a prize from the institute. Napoleon having become sensible of his worth, de Gerando was made secretary-general in the ministry of the interior, afterwards member of the committee of regency in Rome, and, in February, 1811, counsellor of state. In 1812, he was intendant at Barcelona. In April, 1814, he declared in favor of the Bourbons, and, in July, was placed in the council of state by the king. Napoleon, in 1815, left him in his office, and sent him, as commissary-general extraordinary, into the eastern departments. Here he acted with prudence and moderation. After the second return of the king, he entered again into the council of state, in the department of the interior. With Laborde and Lasteyrie, he endeavored to introduce the Lancastrian method of instruction into France. This philosopher has written *Des Signes et de l'Art de penser, considérés dans leurs Rapports mutuels* (1800, 4 vols.); *Vie du Général Caffarelli-Dufalga; Eloge de Dumarsais*, &c. His chief work is *Histoire comparée des Systèmes de Philosophie rélativement aux Principes des Connaissances humaines* (1803, 3 vols., 2d revised ed., 4 vols., Paris, 1823; the 4th vol. closes the history of scholastic philosophy). It is the best work which the French possess on the history of philosophy. His essay on the philosophy of Kant received the prize of the national institute. De Gerando, together with Villers, has contributed much to make his countrymen acquainted with the literary researches of Germany, particularly since, in his comparative history of the different philosophical systems, he has given a survey of the doctrines of Kant, Fichte, Schelling and other German philosophers. His last work, *Du Perfectionnement moral ou de l'Éducation de soi-même* (Paris, 1826, 2 vols., transl. Boston, 1830), is based on self-knowledge as the foundation of self-government. It is much esteemed.

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 single, terminating in five stigmas. The species are herbaceous or saffruticose, with the younger stems articulate. Most of the cultivated species belong to the subgenus *pelargonium*, 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. Three species of geranium proper inhabit the U. States.

GÉRARD, Francis, a painter, of the modern French school, born in Rome, in 1770 (his father was a Frenchman, his mother an Italian), must be called the most distinguished pupil of David, if he is not to be placed by his side as himself a master. His paintings are distinguished by loveliness and grace. His drawing is as correct as his coloring is brilliant and natural. His first instructer, the statuary Paiou, wished to confine him solely to drawing, but Gérard secretly procured colors, and, in his 14th year, executed a picture representing the plague. This picture breathes a noble, ardent mind, as well as a deep sense for antique beauty. Under David's guidance, Gérard made

rapid progress. He was, in the beginning, a zealous partisan of the revolution, and was made a judge in the revolutionary tribunal. In order, however, not to partake in the process of the queen, he feigned sickness. In his portraits, Gérard is very unequal. His historical paintings are few, compared with his portraits. In the branch of portrait-painting, he has no rival but Rob. Lefebvre. For a portrait of a private person, he commonly receives from 1500 to 2400 francs; for every full-length picture of a member of Bonaparte's family, he received 30,000 francs. Among Gérard's historical paintings are his Belisarius, exhibited in 1795. The composition is extremely simple. No less distinguished are his Ossian, his Cupid and Psyche, the Four Ages of Life, and his Daphnis and Chloe, exhibited in 1825. The Battle of Austerlitz he painted with reluctance, and only at Napoleon's command. Gérard painted king Louis XVIII, the emperor Alexander, the king of Prussia, the king of Saxony, the duke of Orleans, and many of the princes assembled in Paris at the time of the occupation of the city. His Entrance of Henry IV into Paris, finished in the year 1817, 30 feet in breadth and 19 feet in height, was the first work of art ordered by Louis XVIII, after his return. It was engraved by Toschi, in 1826. This work procured Gérard the title of the first painter of the king. He is also a member of the orders of St. Michael and the legion of honor, as well as of the academies at Paris, Vienna and Florence.

Gérard, count; an able officer, born in Lorraine, in 1774. He served in the early campaigns of the revolution as aid-de-camp to general Bernadotte, and reached the rank of brigadier-general during the Prussian campaign, in 1806. Very soon after this, he was made commander of the legion of honor, and placed at the head of the staff of the French army in Denmark. In 1808, he received the Danish order of Dannebrog. In the campaign of 1809, he distinguished himself at the combat of Urfar, in front of the bridge of Lintz, and particularly at the battle of Wagram, in which he commanded the Saxon cavalry. His conduct in 1812, at the battles of Valentina and Borodino, and, indeed, on every occasion, induced Napoleon to give him the command of the division of general Gudin, who had been killed. At Frankfort on the Oder, Gérard, with a small body of troops, defeated 2000 Russian cavalry, which intercepted his passage to Berlin. In the campaign of 1814, he gained great reputation at Dienville, at Nangis, and especially at Montereau, at which latter place he took 5000 Austrians prisoners. After the restoration of Louis, Gérard was sent to Hamburg to bring back the French troops, and, on his return, was made a knight of St. Louis, and received the grand cordon of the legion of honor. When Napoleon reascended the throne, he appointed him general-in-chief of the army of the Moselle, and, at the head of that army, Gérard carried the position and village of Ligny, and contributed greatly to the defeat of Blucher. His corps next formed a part of the army of Grouchy, which manœuvred on the Dyle, during the battle of Waterloo, and in this service he was wounded. Since then, count Gérard has not been employed, until the revolution of 1830, after which he was made minister of war, and, together with Lafayette and admiral Duperre, a marshal of France. (See *France.*) General Gérard commanded, July 29, 1830, the body which took the Tuileries, after Lafitte and other deputies had their interview with marshal Marmont. (See *France, History of.*)

Gerhard, Paul, born in Saxony, 1506 or 1507, died in 1676, contributed largely to the great stock of German hymns. Some of his hymns are very popular in Germany, and often quoted. He was all his life an officiating clergyman, 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, over two leagues north from Versailles, and four leagues west north-west 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 the first Sundays of August and September, fairs begin to be held in the forest near St. Germain, each of three days' continuance. They are real *fêtes champêtres*, and many Parisians go there. Under Louis XIV, the castle was the asylum of James II and his family. James II died here in 1701, his daughter in 1712, 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 alchymist, whose name and origin are unknown. He sometimes called

himself Aymar, or marquis de Betmar, and was probably a Portuguese by birth. Cagliostro (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, which he pretended to have made in 1755, he succeeded, as he said, in gaining the chief object of all adepts, namely, the making of precious stones; and it is reported, that, in 1773, while with the French ambassador at the Hague, he 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 XV. 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. Duhaussct.*

Germanicus, Cæsar; 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 questorship, 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 horrible slaughter among them, and destroyed the temple of Tanfana. In a similar manner he defeated, in the following year, the Catti, and, after having burnt their city of Mattium (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 on the Ems. A battle ensued. The Roman legions were already receding, when Germanicus renewed the attack with fresh troops, and thus happily averted the rout that threatened him. Arminius retreated, and Germanicus was content to regain the banks of the Ems, and retired with honor from a contest which his army could no longer sustain. 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 Germans. He built a fleet of 1000 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 day-break, 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 reëmbarked, 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, however, to get rid of a man whose popularity appeared dangerous to him, he 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 34 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 salter than those of the Baltic, but less so than those of the main ocean: they contain 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 Scaggerac (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 (between 54° and 57° N. latitude, and 3° 40′ and 6° 37′ E. longitude). In general, the navigation 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, Denmark and Norway; they are still greater 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 boisterous navigation of this sea, need not fear to encounter the Atlantic; and it has accordingly been the nursery of the greatest maritime powers in Europe. The formation of the Zuyder Zee (q. v.), in the 13th century, by a great irruption, and the destruction of an island on the coast of Sleswick, in 1634, are proofs of its fury. The only island of much importance is Heligoland, 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 Holland; Emden, Bremen and Hamburg, in Germany; Christiansand and Bergen, in Norway.

Germantown; a post-town in Philadelphia county, Pennsylvania; 7 miles north of Philadelphia; population, 4311. It contains a bank, an academy, and several houses of public worship, for Presbyterians, for German Calvinists, for Lutherans, for Friends and for Mennonists. It is pleasantly situated, and has considerable manufactures. Most of the houses are built on one street, which is about two miles in length. Here is the principal congregation of the Mennonists in America. 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, 500 wounded, and four taken prisoners: the British lost 70 killed, and 430 wounded and taken prisoners.

Germany, Geography and Statistics of. Germany is bounded east by Western Prussia and Posen, Poland, Cracow, Galicia, Hungary and Croatia; south by the Adriatic, the Lombardo-Venetian 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 60 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 Traunsee, the Wurmsee, the Dümmersee, the Plauensee, &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 Tyrolese Alps, the Alps of Allgau, the Carnic and Julian Alps, running from east to west. The most northerly mountain chain extends, in a winding direction, from east to west. It begins near the Carpathian mountains, with the Sudetic chain, which gives out the Rieseugebirge, between Silesia and Bohemia; to the south-west are the Moravian mountains;

to the north-west, the Bohemian forest. From the latter, the Saxon 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 Hartz, to the west of which, and crossing the Weser, extend the Weser mountains, forming, near Minden, the Westphalian Gates. Southwardly from this are the Sauerland mountains, the Westerwald and the Siebengebirge on the Rhine. From the Thuringian forest, to the south-east, extend the Rhoen, the Vogelsberg and the Taunus, the latter of which stretches to the Rhine. From the Rhoen mountains, southwardly, run the Spessart, the Odenwald, the Schwartzwald (Black Forest, q. v.), which extends to the Upper Rhine, and is connected towards the east with the Rough or Suabian Alps, and approaches the Alps of Allgau. Beyond the Rhine are the Donnersberg and Hundsruck, which, with part of the Ardennes, are connected with the Vosges. In northern Germany, there are sandy heaths and moors, and many districts contain fertile strips only along the large rivers. On the whole, the soil is fertile. The climate is temperate and healthy; in the north more wet and severe, in the south more dry and mild. The number of inhabitants is estimated at 34,343,900 in 2390 towns, of which 100 have over 8000 inhabitants, 2340 market villages, 104,000 villages, and numerous small settlements. Of the inhabitants, there were, in 1825,

Germans,	27,705,855
Slavonic origin,	5,325,000
Walloons and French,	309,000
Jews,	292,500
Italians,	188,000
Gipsies,	900
Armenians and Greeks,	900

In the same year, the number of persons of different religions was as follows:

Catholics,	18,376,300
Protestants,	15,150,500
Jews,	292,500
Greeks and Armenians,	900

The number of students in the universities (24) was, in 1829, about 18,000;*

						Students.
Vienna,	founded	1365,	in	1828	had	1900
Berlin,	"	1810,	"	1829	"	1706
Göttingen,	"	1734,	"	1829	"	1264
Prague,	founded	1348,	in	1828	had	1440
Leipsic,	"	1409,	"	1829	"	1000
Munich,	"	1826,	"	1828	"	1776
Halle,	"	1694,	"	1828	"	1385
Breslau,	"	1702,	"	1828	"	1021
Bonn,	"	1818,	"	1829	"	1002
Tübingen,	"	1477,	"	1829	"	874
Heidelberg,	"	1386,	"	1829	"	600
Würzburg,	"	1403,	"	1829	"	513
Freiberg,	"	1457,	"	1829	"	667
Jena,	"	1557,	"	1829	"	650
Giessen,	"	1607,	"	1829	"	553
Marburg,	"	1527,	"	1829	"	347
Erlangen,	"	1743,	"	1829	"	449
Kiel,	"	1665,	"	1829	"	380
Greifswalde,	"	1454,			"	134
Rostock,	"	1419,			"	125
Münster,	"	1631,			"	400
Fürth,	"	——,			"	85
Innspruck,	"	1826,			"	300
Grätz,	"	1827,			"	300

There are public libraries in 150 places, with 5,113,500 volumes. 10,000 authors produce annually from about 3300 to 5000 new books. There are about 100 political journals, 220 other journals, and about 150 periodical publications. Germany is rich in natural productions. Excellent cattle are raised in many parts of the country. Holstein, Mecklenburg, &c., are distinguished for their good breed of horses. The breed of sheep has been much improved by the introduction of the merinos. Westphalia and Bavaria have an excellent breed of swine. Goats, asses, tame and wild fowl, bees, the silk-worm, numerous kinds of fish, crabs, deer, and in some mountainous tracts in the south, wolves, bears, lynxes, chamois, marmots are found. Various kinds of grain are produced in sufficient quantity for exportation; also spelt and maize are cultivated in the south, and buck-wheat in the north, besides leguminous fruits, various garden vegetables, rape-seed, flax, hemp, tobacco, hops, madder, woad, safflower, saffron, anise, a great quantity of fruit in the south, including good chestnuts, almonds, and many peaches and apricots. The cultivation of the vine is successfully carried on along the Rhine in Franconia, along the Moselle and the Neckar, in Austria, and in part of Bohemia and Saxony. The northern line of the grape is Witzenhausen, in Hesse-Cassel. The forests contain the oak, beech, fir tree, pine, birch, &c. The mineral kingdom produces some gold (some rivers contain gold-dust), a considerable quantity of silver (in particular, in the Erzgebirge and the Hartz, 200,000 marks annually), quick-silver

* 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 superiority of the numbers in Vienna over those in Berlin.

(in Idria and Deux-Ponts), tin (in Bohemia and Saxony), lead, copper, iron, calamine, molybdene, cinnabar, bismuth, arsenic, antimony, alum, vitriol, zinc, sulphur, salt-petre, cobalt, coal, marble, lime, alabaster, gypsum, asbestos, slate, sand-stone, free-stone and pumice-stone, trass, jasper, chalcedony, serpentine, basalt, granite, porphyry, many kinds of precious stones, amber, ochre, clay, the finest porcelain clay, fuller's-earth, marl, peat, petrolium, spring and rock salt, and various kinds of mineral waters. The principal objects of German manufacture are linen, woollen, silk, leather and cotton goods, laces, paper hangings, paper, glass, mirrors, porcelain, delft ware, gold, silver, iron and steel wares, guns and sword blades, musical and other instruments, watches and lackered ware, wooden clocks, 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 $7,500,000), wine, linen (formerly to the amount of $22,000,000), thread, iron and steel wares, philosophical instruments, toys, porcelain, lackered wares, quicksilver, glass, looking-glasses, cattle, particularly draught horses, succory fruits, wool, salt, minerals, Bohemian garnet, amber, smoked and salt meat, potteries, smalt, beeswax, woollen 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 Embden; 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 Breslaw; in South Germany, Frankfort on the Maine, Nuremburg, Augsburg, Prague, Vienna and Bolzano. The map of Germany, by Reymann (Berlin, 1825 et. seq.), in 342 sheets, is the most complete that has appeared. Hassel's *Statist. Uebersicht der 39 Deutschen Bundestaaten* (1825), Lichtenstein's *Deutschland's Bundestaaten* (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 Germanic confederation, has a favorable 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 17th century, however, when the Hanseatic cities, and Nuremburg 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, have 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 unfavorable influence on commerce than even the prohibitive system of the neighboring states. Germany can carry on trade by land with France, Italy, Switzerland, the Netherlands, Poland, Russia and Hungary; by sea, with France, Spain, Portugal, England, the Northern states, Italy, Turkey and America. Its trade by sea is chiefly with England, 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 England and Holland, in-

stead of against each other, Germany, with a population of 34,000,000, 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 $24,000,000 annually, is transacted. They collect persons from all parts of Europe. Those of Frankfort and Leipsic 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 English 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, unless a free 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 (962), 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 (q. v.) of 1356; 3. the decrees of the diets; 4. the electoral capitulations; 5. the treaty of Passau, of 1552, or, rather, the religious peace of Augsburg, founded on that treaty; 6. the peace of Westphalia of 1648. In 1500, Maximilian I and the estates divided Germany into the six circles of Franconia, Bavaria, Suabia, 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 four electors on the Rhine and the two Saxon electors. Lusatia, Silesia, Bohemia, Moravia, Montbelliard, 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 Maine. 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 those immediate members who had a seat and vote in the diet, were either spiritual, 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. that of the electors; 2. that of the princes, which was divided into 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 Wetteravian, 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, definitively, on any proposition, which, when ratified by the emperor, became a decree of the empire. All the decrees of a diet were called a *recess 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 its former contingent of men, paid twelve florins for every horseman, and four florins for every foot soldier; and these sums, called *Roman months* (because the first expeditions 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 they called a *Roman month*), were allowed to the emperor in all extraordinary cases, particularly in the wars of the empire. A Roman month, for the whole empire, consisted of 20,000 infantry and 4000 cavalry, which amounted to the sum of 128,000 florins. The estates, 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 Austrägal courts. (See the account of the *Austrägal 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 emperors were obliged to resort to the revenues of their hereditary dominions 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 fiefs, and in part allodial, 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 reformation (*jus reformandi*), and could introduce, and tolerate in their territories, either of the three religious parties; yet they could not encroach upon the rights and possessions of any religious party, which existed in their dominions in the Normal year (q. v.) 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 Protestant subjects; but 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 favor, 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 excitements 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 considers the horrors of the thirty years' war. (See *Thirty Years' War*.) The dissolution of the German empire (6th August, 1806), made way for the confede-

ration of the Rhine (q. v.), which was 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 possession, at the expense of the interior German princes. 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 war, its inefficiency must be still more apparent. 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 sustain that struggle which England 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 developement of public law, and extinguished in their literature that manliness, which is so striking a feature in that of a neighboring 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 commotions 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. Prussia; 3. Bavaria; 4. Saxony; 5. Hanover: 6. Würtemberg; 7. Baden; 8. Hesse-Cassel; 9. Hesse-Darmstadt; 10. Denmark (for Holstein and Lauenburg); 11. the Netherlands (for the grand-duchy of Luxemburg); 12. Mecklenburg-Schwerin; 13. Nassau; 14. Saxe-Weimar; 15. Saxe-Coburg-Gotha; 16. Saxe-Meiningen; 17. Saxe-Altenburg; 18. Brunswick; 19. Mecklenburg-Strelitz; 20. Holstein-Oldenburg; 21. Anhalt-Dessau; 22. Anhalt-Bernburg; 23. Anhalt-Cothen; 24. Schwartzburg-Sondershausen; 25. Schwartzburg-Rudolstadt; 26. Hohenzollern-Hechingen; 27. Lichtenstein; 28. Hohenzollern-Sigmaringen; 29. Waldeck; 30. Reuss, elder branch; 31. Reuss, younger branch; 32. Schaumburg-Lippe; 33. Lippe-Detmold; 34. Hesse-Homburg; 35, 36, 37, 38. The four free cities, Lubeck, Frankfort (on the Maine), Bremen, Hamburg. The house of Saxe-Gotha became extinct in 1825, and its vote in the diet now belongs to the three lines of the house of Gotha. The organ and representative of the confederation is the diet of plenipotentiaries, which is permanent, and as-

sembles in the free city of Frankfort on the Maine. The diet is constituted in two forms: 1. as a general assembly (*plenum*), in which every member has at least one vote: the great powers have several, viz. Austria and the five kingdoms have each four votes; Baden, Hesse-Cassel, Hesse-Darmstadt, Holstein and Luxemburg, each three; Brunswick, Mecklenburg-Schwerin and Nassau, each two; the other states each one; making, altogether, seventy. In the making or altering fundamental laws, in the admission of new members into the confederacy, and in religious matters, unanimity is required. In all other cases, two thirds of the votes of the general assembly are necessary for the adoption of any measure; so that, in point of fact, unanimity is required in almost all important cases, except in the declaration of war, or conclusion of peace. The other form of the diet is the ordinary assembly, in which the thirty-nine members of the general assembly have but seventeen votes. Austria, Prussia, Bavaria, Saxony, Hanover, Würtemberg, Baden, Hesse-Cassel, Hesse-Darmstadt, Holstein, and Luxemburg, have each one vote (11). The other votes are collective. The twelfth is given by the grand-duchy and duchies of Saxony (Ernestine branch); the thirteenth by Brunswick and Nassau; the fourteenth by Mecklenburg-Schwerin and Strelitz; the fifteenth by Oldenburg, the three houses of Anhalt, and the two Schwartzburg houses; the sixteenth by Hohenzollern, Lichtenstein, Lippe, and Schaumburg-Lippe, Reuss and Waldeck; and the seventeenth by the four free cities. This assembly brings forward and discusses propositions, which must be decided in the *plenum*, or general assembly (in which there is no discussion). It also executes the decrees of the diet, and, in general, manages the affairs of the confederation. It decides by a simple majority of nine votes. Austria presides in both diets, and has the casting vote in the smaller assembly. The deputies have the character of plenipotentiaries, are responsible to their respective governments only, and are, therefore, governed by the instructions of their courts, not by their own convictions. The sessions of the diet are partly confidential (in which the preliminary conferences take place, and of which no journal is kept), and partly formal. Disputes between the members of the confederation, the diet first endeavors to compose by a committee. If this does not succeed, a legal process is commenced, and the supreme court of one of the states of the confederation is chosen by the parties to settle the dispute in a regular, judicial way. The chief objects of the German confederation are the following: 1. the independence and integrity of the states; with this is connected the right of examining the disputes between members of the confederation and foreign 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 confederacy. 3. The internal tranquillity 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 confederacy 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 Mentz, 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 13 says: All the states of the union shall have *landes-ständische Verfassungen*. This *landes-ständische* has been since explained in such a way, that mockeries of constitutions, 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 right of the subjects of each state to hold real property in every other state of the confederation. 8. The regulation of the legal relations of the mediatized princes of the old empire. (See *Mediatization.*) These provisions were first settled by the fundamental act of the 8th June, 1815, and confirmed, according to a decree of the congress of Vienna, as the constitution of the confederation, June 8, 1820. These acts are contained in the *Corpus Juris Confœderationis Germanicæ*, by Meyer (Frankfort, 1822), and in the *Corpus Juris publici Germanici Academicum*, by Ad. Michaelis (Tübingen, 1825). (For the size, population and revenue of the several states of the German confederation, see the table of European states, under the head of *Europe.**) In regard to

* In those sets of this work in which the area of these states (under the head of *Europe*, in vol. 4), is given in German miles, and the revenue in

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 $28,200,000. Those of Prussia contain about 71,000 square miles, with a population, in 1827, of 9,302,220, and a revenue of $25,398,200. The Danish province of Holstein contains 3646 square miles; population in 1827, 440,900; revenue, $840,000. The duchy of Luxemburg, belonging to the king of the Netherlands, contains 2183 square miles; population in 1827, 296,500; revenue, $720,000.

The court appointed to settle disputes between the members of the German confederacy, is called the *court of Austrägalinstanz*. The 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 Hohenstaufen 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 feuds and private warfare, a general supreme court became necessary, to decide 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, who are to endeavor to compose them 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 endeavored, even at the congress of Vienna, to bring about the establishment of a permanent tribunal for these important affairs; 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 confederacy, 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 process takes place in case the demands of a private person are not satisfied, in consequence of the obligation to give satisfaction being a subject of dispute between several members of the confederacy. Several disputes have already been decided in this manner, and others are still pending.

guilders, an improved form of the table will be found as an appendix to vol. 5, in which dollars and English miles are substituted.

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, even in summer, impenetrable forests prevented the genial rays of the sun from reaching the ground. They thought that the Germans (*Heermannen*, i. e. War-men: see Von Hammer's account of the origin of this name in the *Wiener Jahrbücher* and Titze in his *Vorgeschichte Deutschlands*), or, as they called themselves after their national god, *Teut* (*Thwiscon*), the *Teutones*, must have lived there from the beginning. They therefore called them *indigenæ* (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 degenerated people, and, therefore, extolled many traits of the ancient Germans beyond their real worth, and, also, that the knowledge of Roman authors respecting the Germans, was, after all, scanty, derived from

observation of German captives at Rome, and the information of soldiers who had served in Germany. In order to give to 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 these 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 interest.

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; inured to cold and hunger, but not to thirst and heat, warlike, honest, faithful, friendly and unsuspicious towards friends, but towards enemies, cunning and dissembling; scorning 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 sole pleasure of the indolent, discontented warrior, 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 noisy feasts. His personal liberty is not too precious to be staked on the cast 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 valor, 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 was early felt of rendering individual opinion subject to that of the majority; and these few rude outlines of political society are sufficient for a nation destitute of high ambition. The youth, born of free parents, and ripened to manhood, is conducted into the general assembly of his countrymen, furnished with the shield and spear, and received as an equal and worthy member of their warlike republic. These assemblies, consisting of men able to bear arms, and belonging to the same tribe, are summoned at fixed periods, or on sudden emergencies. The free vote of the members of these councils decides on public offences, the election of magistrates, on war or peace. For though the leaders are allowed to discuss all subjects previously, yet the right of deciding and executing is solely with the people. Impatient of delay, and obeying the impulse of their passions, without regard to justice or policy, the Germans are quick in adopting resolutions. Their applause or dissatisfaction is announced by the clashing of their arms, or by a murmur. In times of danger, a leader is chosen, to whom several tribes submit. The most valiant is selected for this purpose, to lead his countrymen more by his example than his authority. As soon as the danger is past, his authority, reluctantly borne by his free minded countrymen, ceases. In times of peace, no other superior is known than the princes, who are chosen in the assemblies to distribute justice, or compose differences in their respective districts. Every prince has a guard, and a council of 100 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, respected no obligations, but those which they imposed upon themselves. To leaders of approved valor, 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 favor 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 indelible 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. Valor 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 inexpiable crime, and was, therefore, very rare. Seduction was 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 favor of the gods; a warlike life, and death in battle, were considered as the surest means of attaining the joys of the other world, where the heroes were 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 bards 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 common cradle 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 land of Chawilah) is the name of that country, in which were assembled the learned and wise, and which, in olden times, was called Dshermania. Before the Scythians, or Scoteles, were forced back by the Massagetæ to the Pontus Euxinus, the Cimmerii, 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: the Istævones, Ingævones and Hermiones. The Hermiones lived between the Elbe and the Vistula, were the parent stock, and were also called *Teutones* and *Semnones*. From them, the Istævones emigrated to the west, the Ingævones to the north. These three chief branches differed essentially from each other; and if it could be proved, that the Westphalians, Lower Saxons, Danes and Swedes are descended from the Ingævones; the inhabitants of the Rhine, the Franconians and Hessians, from the Istævones; 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, founded large states. Such southern colonists were the Quadi, Marcomanni, and their descendants, the Boiarii, 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, who called themselves *Cimbri*, appeared on the Alps, seeking new habitations, defeated the consul, Papirius Carbo, and, having united with the Tigurini, 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 Rhone. 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 Tigurini over the northern. Marius 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. Cæsar, after having subjected Gaul, and carried his victorious arms as far as the Rhine, first became acquainted with a nation called *Germans*. Ariovistus, their leader, who had formerly lived on the south of the Danube, formed the design of settling in Gaul, but was defeated by Cæsar, and compelled to retreat over the Rhine. The Bricocci 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. Cæsar 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 those tribes only that lived nearest to the Rhine, as the Ubii, Sygambri, Usipetes and Teucteri. The rest of Germany, he was told, was inhabited by the Suevi, who were divided into 100 districts (*Gauen*), each of which annually sent 1000 men in quest of booty. They lived more by hunting and pasture than by agriculture, held their fields in common, and prevented 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 inroads into Gaul with impunity, and Agrippa transferred the Ubii, who were hard pressed by them, to the west side of the Rhine. But the Sygambri, having defeated Lollius, the legate of Augustus (A. U. C. 739), the emperor himself hastened to the Rhine, erected fortifications along the bank of this river, to oppose the progress of the enemy, and gave 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, after him, held the chief command on the Rhine during 2 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, Quinctilius Varus, by which all the advantages, that had been previously gained, were lost. His violent 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, with his army. A few fugitives only were saved by the legate Asprenas, 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 valor and military skill of the young hero, he did not succeed in reëstablishing 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, several Suevian tribes in a confederacy, 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, Hermunduri, Quadi, Longobardi and Semnones, 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 rebel-

lion in Dalmatia obliged him to conclude a disadvantageous peace. The disasters which afterwards befell the Romans in the west of Germany, 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 engaged in disputes. On the one hand, the Longobardi and Semnones, disgusted with the oppressions of Maroboduus, deserted his confederacy, and joined the Cherusci; and on the other, Inguiomerus, 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, according to the rules of military art, 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 Catualda, king of the Goths, to fall upon him, forced him to leave his country, and to seek refuge with the Romans. Catualda, 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, A. D. 21, fell from their high rank among the German nations. Weakened by internal dissensions, they finally received a king from Rome, by the name of Italicus, who was the last descendant of Arminius. During his reign, they quarrelled with their confederates, the Longobardi, and sunk to an insignificant tribe on the south side of the Hercinian 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 pride, however, was humbled by Galba, who compelled them to abandon the country between the Lahn, the Maine and the Rhine, which was distributed among Roman veterans. Eighteen years later, a dispute arose between the Hermunduri and Catti, on account of the salt-springs of the Franconian Saale. Meanwhile, the numerous companions of Maroboduus and Catualda, having settled on the north of the Danube, between the rivers Gran 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 neighboring tribes. Although Vannius had entered into an alliance with the Sarmatian Jazygæ, he was overpowered by the united arms of the Hermunduri, Lygii and western Quadi (A. D. 50), and was compelled to fly for refuge to the Romans. His son-in-law, Sido, 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 Lygii, asked for assistance from Domitian, who sent them 100 horsemen. Such paltry succors only offended the Suevi. Entering into an alliance with the Jazygæ, 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 against Rome on the other side, by the united forces of the Marcomanni, 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). Meantime the Catti devastated Gaul and Rhætia, the Cherusci forced the Longobardi back to the Elbe, and now appear under the name of *Franks*. A. D. 220, new barbarians appeared in Dacia, the Visigoths, Gepidæ 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 Alemanni, consisting of Istævonian tribes. Rome, in order to defend its provinces against them, erected the famous *Vallum Romanorum* (Roman wall), the ruins of which are still visible from Jaxthausen to Oehringen. But the power of the Romans sunk more and more, 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 5th 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 Longobardi (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 empire by the German Odoacer, who made himself king of 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 Carlovingians ascended the throne of France, and the conflicts with the neighboring 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 30 years. Wittikind the Great, duke of Saxony, finally submitted, and, 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 attacked 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 Elbe, again renewed the war. By transplanting 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 peace. Frankish 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—876). At this period, the Rhine formed the frontier of Germany on one side (Spire, Worms and Mentz, on 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 Sclavonians, particularly the Wendes. He enlarged his dominions by the annexation of Cologne, Treves, Aix-la-Chapelle, Utrecht, Metz, Strasburg, Basle, and several places on the left banks 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 sunk so low in the estimation of the nation, that the Germans declared the crown forfeited

(887), and raised his nephew Arnold of Carinthia, a natural son of Carloman, to the new throne. After several severe struggles with the Sclavonians 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 Carlovingian race became extinct in Germany. With Henry the Fowler commenced the line of Saxon emperors, distinguished for warlike vigor, 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 in 1806. If we examine this period of 970 years, we find Germany, for a long time, in an unsettled state, suffering under the arbitrary power of its rulers, the feudal oppressions, and the struggle of secular authority against the usurpations of the clergy, till Conrad II (1024—39) organized the feudal system by a new statute, and first checked the fury of private warfare, by establishing the truce of God, by which the prosecution of deadly feuds, in certain places and on certain days of the week, was attended with the punishment of outlawry. He enlarged the empire by the addition of Burgundy. His successor, Henry III (1039—56), humbled the papal pride by deposing three popes successively. But the authority of Rome, which exerted so great influence in Germany, gained the ascendency under Henry IV (1056—1106) and pope Gregory VII. That emperor was too weak to prevent the establishment of the maxim, that the secular power was subject to the spiritual. The warlike spirit of the German nobility found a theatre of action in the crusades, which powerfully promoted the civilization of all Europe. (See *Crusades*.) The establishment of the first orders of knighthood, the knights of St. John, the Templars and the Teutonic order (q. v.), had an important influence on future events. The constitution of the empire was the chief obstacle to the rising commerce, which now began to introduce the productions of Asiatic industry into Germany. For 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 this emperor, and, still more, under Frederic 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 imitated by the separate members of which the empire was composed. These convoked the syndics of the towns, the superiors of the monasteries, and the great proprietors, to deliberate on public affairs: this was the origin of the provincial diets. The character of Frederic II had a beneficial influence upon all Germany; which was, however, in a measure, limited by his wars in Italy. The claims of the German emperors, in that country, had, from the beginning, weakened their power, and prevented them from establishing and maintaining domestic order. His plans were also counteracted by the opposition of the pope and the powerful enemies of his (the Hohenstaufen) family. On his death, in 1250 (or, perhaps we may say, on the election of his rival, Henry Raspe, by the instigation of the pope), the great interregnum began. Conrad IV, son of Frederic II, elected king in 1237, had to contend with his rivals, William of Brabant, Alphonso of Castile and Richard of Cornwall, and was so much occupied with his own personal safety, that, in the disordered state of the empire, all treaties were violated, the laws disregarded, and all the excesses of private warfare renewed. The nobles in Suabia, Franconia, and on the Rhine, rendered themselves immediate vassals of the empire, as there were no dukes powerful enough to keep them in check. Thus almost every thing that Frederic II had done for the constitution, for the arts and sciences, was destroyed. The last of the Hohenstaufen, Conradin of Suabia, perished on the scaffold, in Naples.

Rodolph I, count of Hapsburg, was raised to the German throne (1272—1291), and restored order with a powerful, and, often, severe hand. The castles of the predatory nobility were destroyed, the right of private warfare almost entirely abolished, and the more powerful princes attached to the government by marriages. Rodolph took Austria, Styria and Carniola

from Ottocar, king of Bohemia, and became the founder of the dynasty which, in the female branch, still reigns in Austria. The reign of Albert of Austria, second successor of Rodolph (1298—1308) is remarkable for the foundation of the liberty of Switzerland. Under Henry VII of Luxemburg (1308—1313), the celebrated division of the Guelfs and Ghibelines took the shape of a continued struggle between the emperors and the popes. On his death, in Italy, the empire was again torn by the rivalry of Frederic of Austria and Louis of Bavaria, the latter of whom was victorious, and received (1330—1347) the imperial crown from the pope; but new difficulties with the holy father ensued, and Germany was laid under an interdict. Six of the electors concluded the elective union of 1338, to prevent the interference of the popes in the election, and determined that the choice of the electors should be decisive without the papal sanction. Charles IV, king of Bohemia, then became sole emperor, and issued (1356) the golden bull, which settled the manner of conducting 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 Wickliffe introduced the spirit of opposition to ecclesiastical abuses. The natural propensity of the Germans to appeal to the sword, revived the right of private warfare in the time of Wenceslaus (1378—1410). Of three competitors of Wenceslaus, Sigismund (1411—1437) succeeded him. During his reign was held the council of Constance (see *Council*, and *Constance*), 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 restoration of order. The reign of Frederic III was marked by the revival of learning, the foundation of several universities, and by the enterprise and activity excited by the discovery of America, which aroused all Europe. Feudal warfare and the tyranny of the nobles still oppressed the country, as is shown in the confederation of the Suabian cities. Maximilian I (1493—1519), an active and enterprising 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-office (1516). The commencement of the reformation (1517) at the university 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 violated in almost every measure of his reign. The reformation begun by Luther made rapid progress; the peasants' war, under Thomas of Munster, spread desolation; the union of the landgrave Philip of Hesse and the elector of Saxony, in favor 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 entire liberty of conscience and equal civil rights with the Catholics, which were principally 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 justice. In 1556, he abdicated the government, and died (1558) in a Spanish monastery. On the succession 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 Catholics permanent. Under his successor, Maximilian II (1564—76), the divisions among the Protestants themselves, the controversies between Melanchthon and Calvin, and the separation of the Calvinists from the Lutherans, by the *formula Concordiæ*, took place, and, in the reign of his son, Rodolph II, the thirty years' war was prepared by the establishment of the union and of 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; the edict of restitution, requiring all the foundations and estates of the church, which the Protestants had seized since 1552, to be restored to the

Catholic church, and authorizing the Catholic states to oblige their Protestant subjects either to embrace the Catholic religion or to emigrate, was already put in force in several places; and Ferdinand thought he had attained his aim when Gustavus Adolphus of Sweden, in pursuance of the plan of cardinal Richelieu, came to the relief of the Protestants. After his death, France opposed Austria; the great elector, Frederic William of Brandenburg, declared (1640) for the Protestants; Banner 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 III (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 Hanseatic league to Hamburg, 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 1663. This emperor became involved in several wars 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 importance in the affairs of Germany. Under Joseph I (1705—1711), 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 favor 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 on the death of Charles VII, by the peace of Füssen (1745), and by that of Aix-la-Chapelle (q.v.) (1748) in favor of Maria Theresa, who, in the mean while, had carried on two wars against Frederic II, the Great. Sept. 15, 1745, her husband, Francis I, was elected German emperor. The seven years' war, so ruinous for Germany, was terminated by the peace of Hubertsburg (1763). Joseph II, the distinguished son of Francis I, succeeded his father in the imperial dignity (1765). His first labor 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 fears for the fate of his benevolent and liberal plans. Leopold 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. Leopold died suddenly, in 1792, and his son, Francis 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). Negotiations 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 26,000 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 three states of the German empire, Bavaria, Würtemberg 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 was strengthened by the accession of 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 25 dukes and other princes were united in the new confederacy. The peace of Vienna (1809) increased its extent and power. The northwestern parts, however, and the Hanseatic cities, Bremen, Hamburg, and Lübeck, 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. Lübeck 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 favorable appearance for the allies, and, Oct. 8, 1813, Bavaria joined the allied arms. Ten days afterwards, the battle of Leipsic destroyed the French dominion in Germany, and dissolved the confederation of the Rhine. November 2, the king of Würtemberg, 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 Rhine. With the exception of some fortresses, the French power was every where 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 independence. Harmony prevailed between 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 events of the campaign in France and the peace of Paris, May 30. France restored all her acquisitions, with the exception of Montbelliard 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 (q. v.), June 8, 1815. The German empire was not revived, but was superseded by a confederation of equal and sovereign states. 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 Montbelliard 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. We close this article in the midst of mo-

* Consult Posselt's *Geschichte der Deutschen*, continued by Pölitz (Leipsic, 1819, 4 vols.); Schmidt's *Geschichte der Deutschen*, continued by Millbiller and Dresch; Heinrich's *Deutsche Reichsgeschichte* (Leipsic, 1805, 9 vols.).

mentous events in Europe, which can hardly fail to have the greatest influence on Germany. May she 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 this 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 greatest part of Europe. In France, it was lost in the mixture of Roman and Gallic languages, from which sprung 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 *Theut*, or *Deut* (from which comes the modern *diet*), signifying *people*. Its origin has been a subject of many learned discussions. A number of similar words in the Sanscrit, Persian, and other kindred tongues, have convinced some that it is derived from the Indian and old Persian languages, or is 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 the Greek from the elder German. According 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 country, showed a striking resemblance, 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 Ulphilas 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 aitha swarands thatei ni kann thana mannen.
Mit (einem) Eide schwörend, dass ich nicht kenne den Mann.
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 letters. A comparison between the language of his time and the present, may be given in a few words:—*Kescrip* (*Geschreibe*, writing); *Keschrifti* (*Schrift*, something written); *Scap*, *Scaf* (*Schaf*, sheep); *erkipit*, (*ergibt*, renders); *chaldan* (*halten*, to hold); *Unchuschida* (*Unkeuschheit*, unchastity); *aikan* (*eigen*, own); *piscauuohe* (*beschauen*, to view); *scuunto* (*schauend*, viewing); *Fiur* (*Feuer*, fire). As an example of the declension:—Singular, *Weg*, *Weges*, *Wege* and *Wega*, *Weg*; plural, nom. *Wega*, gen. *Wego*, dat. *Wegum* and *Wegon*, acc. *Wega*. The verbs present similar modifications; the formation of the preterite, by means of the auxiliary *haben*, was then entirely unknown. This Franconian dialect gave way to the Alemannic or Suabian, which was cultivated particularly under the emperors of the family of Hohenstaufen. A great number of full sounding vowels give the language of the Minnesingers a certain melody. It has many expletives, particles, prefixes, ellipses; it readily forms derivatives and diminutives and compound words. The grammatical construction 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 16th and the beginning of the 17th centuries, it was mixed with many foreign words, particularly French, which, however, 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 in general, displayed their contempt for their native language, for Lessing, Gottsched and others, by precept and example, to purify it from its foreign additions. The German language at present exists under the following forms: on the northern coast, through a great part of Lower Saxony and Westphalia, the Low 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 Suabia, a great part of Bavaria, Alsatia and the German countries of Switzerland, the Suabian or 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 *Niebelungenlied;* 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 is a medium between the Franconian and Suabian. 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 every where 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. The prepositions may be either connected closely with 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 full force of his ideas, independent of any phrase or construction, as well as to produce, on the other hand, the finest shades in the meaning and strength of words, by varying their place and rank in the construction. From these united causes, its fitness for poetical expression, its susceptibility of all kinds of rhythm and verse, and its capacity of entering into the spirit of every foreign language, are easily explained. The Germans have translations of Shakspeare 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 aspirated 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 necessarily the case is shown in the pro-

nunciation 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, Heinsius, &c. The best modern grammars are those of Adelung, Heynatz, Moritz, Roth, Hünerkoch, Reinbeck, Heyse, Heinsius, Pölitz and Grimm. German prosody has been very ably treated by Voss—*Zeitmessung der Deutschen Sprache.* The following German-English dictionaries may be recommended to students:—Eber's, in 5 vols., 8vo.; Küttner and Nicholson's, also in 5 vols. 8vo.; Bailey and Fahrenkrüger's (new edition by Wagner), 2 vols. 8vo.; Ficks Erlangen; Burckhard's Pocket Dictionary, 1 vol.; Rabenhorst's, 1 vol. Of grammars, that of doctor Follen (Boston, 1828) is superior, in practical usefulness, to those of Nöhden 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 then we must allow that it is capable of 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 subordination of art to nature. (Of *German poetry*, we shall treat in a particular article.) The earliest written monument of the German language, dates from the year 360. It is the translation of the four Gospels into the Mœsogothic, by bishop Ulphilas. The German language was therefore written earlier than any of the living European tongues. The Franks established schools in Gaul, in the 6th century, which taught, however, only reading, writing, and a little bad Latin.

I. 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, collected the monuments 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 favorable to the independent developement of the German language and character. The greatest progress was made under the Saxon emperors (from 919), particularly the three Othos, and under the Franconian emperors (from 1024). In the 10th century, there were several distinguished chapter and abbey schools, which were endowed with libraries. To this period belong the writers of chronicles, Eginhard, Witikind, Dithmar, Lambert, Bruno; the philosophical and miscellaneous writers, Alcuin and Rhabanus Maurus (776—856), and particularly those who wrote in German; Otfried of Weissenburg, whose metrical translation of the Gospels is remarkably faithful and concise (see *Otfried*); Notker (abbot of Saint Gall, died 1022); Willeram (abbot of Ebersberg, in Bavaria, died 1085,) and the author of the hymn to St. Anno.

II. A second period commences with the Suabian emperors (1138), and extends to the time of the reformation, in the beginning of the 16th century. Germany had begun to be settled and cultivated in its interior, and cities were founded. The monastic schools, the expeditions 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 Suabian dialect, and made it the general language of literature. The Minnesingers (see this 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 13th century. The Roman law had been made the subject of treatises as early as the 11th century, and applied to German institutions. Histories were also written, such as the Chronicle of bishop Otho of Freysingen, and his history of

Frederic I; the works of Henry of Herford (died 1370), Gobelinus Persona (1420), and many others in the Latin language. The Chronicle of Ottocar of Horneck, in rhyme, (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 Arabians, was now more diligently cultivated; it was combined with theology, and used for the defence of the tenets of the church, by which it was in turn influenced. Among the schoolmen, several Germans were distinguished in the beginning of the 13th 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, Geyler of Kaisersberg, Sebastian Brant, a severe satirist (born 1458, died 1520), 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 14th century, the establishment of universities, and, in the 15th, the invention of the art of printing, made new epochs in literature. The ruin of the Greek empire (1453), the scholars of which fled to Italy, and spread the germs of a new civilization over all Europe, by rendering the classical authors more generally known, coöperated powerfully with the circumstances above mentioned. The spirit of inquiry, which was excited in the universities by the study of the ancients, was the chief cause of the efforts in favor of a reformation. Among those who, at a very early period, promoted the progress of learning and civilization, are Rhodolphus Agricola (1442—85), professor in the university of Heidelberg, Conrad Celtes, (1459—1508), Johannes Trithemius (1462—1516), and, above all, Reuchlin, professor in Tübingen (1454—1525), and Ulric of Hutten (1458—1523), Melanchthon, Joachim Camerarius, and the celebrated Erasmus of Rotterdam.

III. *Modern Literature, from the Reformation to our own Times.* 1. With Luther, who, by his masterly translation of the Christian Scriptures, created the German prose and the High German language of literature, was united Melanchthon, the mild and learned disciple of Reuchlin. Luther was more active in public, while Melanchthon labored for the improvement of schools and the diffusion of learning. Latin schools and libraries were established by the Protestant princes, and theology and philology mutually assisted each other. But after the dogmatical system of the Protestant church had become more settled, less attention was paid to the study of the ancient languages; a scholastic and polemical theology prevailed, to which mystical doctrines were beneficially opposed. Melanchthon had already endeavored, by philosophical compendiums, to supplant the scholastic philosophy; and from that time efforts were made to approach the original peripatetic doctrines. The mystics attached themselves either to the Cabbala, to which Reuchlin was led by his study of the Hebrew literature, or to chemistry and astronomy, which at that time, however, differed little from alchemy and astrology. At the head of the mystics were the celebrated Paracelsus, Valentine Weigel, Jacob Böhme, and others. In the natural sciences, the great metallurgist, George Agricola of Meissen, and Conrad Gesner (1542), the father of natural history, were distinguished. Theophrastus Paracelsus (1526) gave a new impulse to chemistry, applied it with success to medicine, and invented several chemical preparations. Medicine, mathematics and mechanics, also, made some progress. Dürer wrote a work on perspective, in the German language. In astronomy, Copernicus and Tycho Brahe were succeeded by Kepler. The jurists of this period occupied themselves with the Roman law, and their science was increased by the church regulations of the Protestants. The foundation of the German political law was laid by the introduction of several fundamental laws of the empire, in the 16th century. The civil code was formed by collecting the laws already existing, and was followed by the criminal code of Charles V, called the *Carolina.* (q. v.) History was less cultivated. The Chronicle of Carion (1532) excited general interest, and was translated into several languages. The universal history of Sleidanus, written in Latin, was more celebrated. Particular history was more attended to. In the middle of the 16th century, the chronicles and documents of the middle ages were collected, and the history of foreign nations was cultivated. The centuriators of Magdeburg (see *Centuries of Magdeburg*)

wrote on ecclesiastical history with diligence and accuracy. Literary history commenced with Conrad Gesner; and, in 1564, a catalogue of the books at the Frankfort fair was published. Learned societies and mutual correspondence maintained a connexion among the scholars of Germany. 2. The thirty years' war threatened to destroy all the work of civilization in Germany; but it could not interrupt the private labors of the retired scholar, although it left him destitute of all public encouragement. During this war, the German language 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 Pegnitz). The peace 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 any where else. Freedom of thought was particularly favored 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 Puffendorf are great names, which must be mentioned here. Otto Guerike stands at the head of German natural philosophers. Whilst the grossest 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 the thirty years' war (1617—1648), during which the Spaniards 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, endeavored to supply the want of a German grammar; and from the time of Christian Thomasius, 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 philosophy intelligible in the German language, were of great importance. His system was adopted and extended by numerous followers, and assailed by others, for instance, Crusius; and thus speculation, as well as style and language, was improved. The Berlin academy of science, founded by Leibnitz, led the way to great discoveries in the mathematical and natural sciences. Literary societies and associations were every where 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—66), contributed greatly to produce this effect. The latter purified the language, but endeavored, 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 *Leipsic school*, was successfully opposed by that of Zurich, at the head of which were Bedmer and Breitinger. The poets, Haller, Hagedorn, 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 archæologists (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, Wieland, Voss, Schiller, Göthe. Lessing, gifted with a rare wit and penetration, appeared as the antagonist of the popular French taste, and the founder of acute criticism. Winckelmann (q. v.), under the influence 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 before attained. In addition to this must be mentioned 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 criti-

cal works endeavored 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, Schleiermacher, De Wette. Philosophy, particularly metaphysics, was developed in the original systems of Kant, Fichte, Schelling, Jacobi, and others. Philology was advanced by the labors of Heyne, Wolf, Hermann, Böckh, Vater, Gesenius, and many others. History presents names like those of John Müller, Woltmann, Schröckh, Schmidt, Spittler, Eichhorn, Heeren, Niebuhr, Luden, Plank, &c. Nor should the services of Voss, Creuzer, Kanne, Görres, in mythology, and of the creators of the most comprehensive criticism (see *German Criticism*), 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 a greater number of German 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 of the English reviewers, in the 52d number of the Edinburgh Review.) In regard to the recent German literature, 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 liberal ideas and legitimacy. In theology, this opposition appears in the systems of rationalism and suprarationalism. 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 that of romantic description are in opposition. 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 supernaturalists, the former of whom either deduce religion from the principles of reason, and endeavor to explain the Scriptures in accordance with those principles, or merely endeavor to free religion from what appears to them supernatural. 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, Bretschneider, Wegscheider, Schleiermacher, De Wette. A few writers, like A. L. Kähler, in his connexion between rationalism and supernaturalism, and A. Klein, in his *Grundlinien des Religiosismus*, 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 Sayler, an intolerant spirit has appeared in other works. The increasing prevalence of the Catholic religion has inspired many Protestant writers with a greater activity. A temporary excitement was occasioned by the theses of Harms, 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 *Christliche 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 archæology and criticism have been extended on every side, by men like Gesenius, Griesbach, Rosenmüller, Kuinöl, Bretschneider, De Wette, Paulus, Flatt, and others. The history of the church, and of dogmas, has been treated by many learned writers, as Spittler, Stäudlin, Bengel, Giessler. Christian morality has been ably and profoundly handled by Reinhard, Flatt, De Wette, Eichhorn, and others. General theology has been cultivated by Stäudlin and Bertholdt. In practical theology, we may mention, as sermon writers, Ammon, Dräseke, Schuderoff, Tzschirner, and many others. Many useful popular theo-

logical works, also, have appeared, among which some of the most interesting are of the mystical kind, as the works of doctor Jung (Stilling), Kanne, 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 on this subject is Feuerbach's *Betrachtungen über die Oeffentlichkeit und Mündlichkeit 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, corresponding 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, Göschen, Schrader, and others, are of the greatest merit. At the same time, the science of criminal legislation has been ably treated by Kleinschrod, Feuerbach, Konopack, Mittermaier. Numerous methodical digests of the law, among which those of Wening and Falck are esteemed, facilitated the study. Philosophy, which had, for a long time, been employed in pulling down old systems and building new ones, heard the call of the age, 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 few will outlive the times in which they originated, yet they have, at least, the merit of having produced the discussion of opposite views. One of the chief subjects of discussion, in political writings, has been the question of representative constitutions, which were promised at the time when the German princes wished to rouse the whole population, to deliver the country from the yoke of Napoleon. The promise was afterwards evaded in most of the larger states, but was partially fulfilled in Würtemberg, Baden and Bavaria. Among the works which appeared on this subject, was Wangenheim's *Idee der Staatsverfassung*. Another subject of interest was the murder of Kotzebue, and the establishment of a political inquisition at Metz. 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. Görres, in his Europe and the Revolution, and Germany and the Revolution, displayed with boldness and profound views the system of deception practised by the oppressors 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 promoting the study. Such was the society established at Frankfort on the Maine, in 1818, for the publication of historical documents, and original writers on German history in the middle ages. Other early documents of German history were, also, diligently examined. Luden's history of the Germans is an important work. Menzel also wrote a history of Germany. Whilst recent times have been accurately described by Saalfeld, the middle ages, so often depreciated or overrated, have found an impartial historian in H. Luden. 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 Müller and Kortum. The earlier history of Rome and Greece has received new light from the labors of Niebuhr and Wachsmuth. The controversy on the mythology of the ancient nations has been carried on by Creuzer, Moser, Ritter, Voss, Hermann, D. Müller, Lobeck, 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 labors on the history of literature. On the history of ancient art, with particular reference to lord Elgin's marbles and the remains of Æginetic art, Thiersch, Hirt, Grotefend, D. Müller, and others, have distinguished themselves. Stieglitz, Busching, Fiorillo, Moller, Von der Hagen, Joanna Schopenhauer, Waagen, and particularly the brothers Boisserée, 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 editions of the classics, by various scholars, Ast (Plato), Poppo (Thucydides), Böckh (Pindar), Hermann (Sophocles), Lobeck (Phrynichus), Bothe (Horace, after Fea), Bekker (Attic orators), Schäffer, &c., and the translations by Thiersch (Pindar), J. H. Voss (Aristophanes), Von Knebel (Lucretius), and the lexicographical labors of J. G. Schneider, Passow, Lunemann, and others; and the great undertaking of the Berlin academy, the *Corpus Inscript. Græc.*, edited by Böckh, the excellent Latin grammar of Schneider, &c. The Oriental languages and literature have been illustrated by the labors of Gesenius, Von Hammer, Görres (who translated the Schah-Namah), and others. Hindoo literature has been cultivated by A. W. Schlegel, J. G. L. Kosegarten, D. Frank, and Francis Bopp. The great Encyclopædia of Ersch 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 Ersch has been enlarged and improved, in a new edition. Among the periodical publications, the *Litteraturzeitungen* of Halle and Jena, the *Göttingen gelehrte Anzeiger*, review every new publication of importance. The *Heidelberger Jahrbücher der Litteratur*, *Hermes*, and the *Wiener Jahrbücher*, confine themselves more to the most 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 were discussed in it with much ability. It was suppressed by the government. The *Morgenblatt*, the *Zeitung für die elegante Welt*, &c., are calculated, not only for amusement, but also for instruction of the cultivated classes. The *Literarischen 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 11th century. At a later period, many of the romantic tales, and fragments of epic poetry, were translated into prose; but this owed its complete developement 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 painter Albert Dürer (born 1471, died 1528) used the German in his works on fortification, and on the proportions of the human figure. John Turmayr (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 Böhme 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 and modern languages, particularly the 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 *Gallomania* 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 courts and the higher classes, 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 restored to its dignity by Laurence Mosheim, born 1694, died 1755. He was followed by a series of pulpit orators—Sack, Jerusalem, Cramer, Spalding, Gieseke, J. A. Schlegel, Zollikoffer, Teller, Sturm, Reinhard, Marezol, Ammon, Niemeyer, Hanstein, Ribbeck, Stolz, Läffler, Dräscke, Harms, Krummacher, Sailer, Schleiermacher, De Wette, Schatter, Tzschirner 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 endeavors of Gottsched, and the many critical journals of his time. Haller published his *Usong*, and other political novels, and Gellert his Life of the Swedish Countess O.—the first example of a representation of domestic life. At the same time, he improved the epistolary style. The novels of Richardson were translated into German by Dusch. Hermes wrote many successful works in the style of Richardson. The novel became the favorite branch of the German authors, for the purposes of amusement, or of moral, philosophical and political instruction. Engel, E. J. Müller, Nicolai, Sebaldus Nothanker, A. G. Meissner, J. H. Jung, F. Schultz, are interesting novelists. Naubhard and Fessler wrote historical novels, whilst Miller's *Sigwart* was distinguished for its excessive sentimentality. Aug. Lafontaine followed his first interesting 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 Lienhand 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 stiff prose of his time the ease and beauty of nature, though he often wrote with too much negligence. Göthe, after his Sorrows of Werther had powerfully excited the sentimentality of that period, gave, in his *Wilhelm Meister*, to the most various situations 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 humor. 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 gave philosophical views and picturesque situations of life, in a dignified and animated style. Thümmel and Clauren were two writers of a sentimental and witty, but graceful frivolity. While Charles Hoffmann gave vent, in comic and passionate description, to his sparkling humor and his feverish melancholy, Theresa von Huber described, in the most refined language, the manners of the higher classes and of religious sects. Carolina von Pichler is also to be mentioned as an elegant and highly interesting authoress. Besides these, there is a number of very interesting novels, of as 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. Spiess 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. (See, also, the article *Philosophy*, in a subsequent volume.) There remain to be mentioned the authors distinguished by their style as historical writers—Spittler, Heeren, Eichhorn, Joh. Müller, Joh. N. Voigt, Posselt, Schiller, Woltmann, Plank, Luden, Pölitz; as philosophical writers, Kant, Heidenreich, Fichte (in particular in his addresses to the German nation), Schelling (for instance, his Discourse on the Relation of Nature to the Plastic Art), Friedrich Heinrich Jacobi, Steffens (On the Present Age), Winckelmann (died 1768), Justus Möser (died 1794), Helf. Peter Sturz (died 1799), Johann Kasp. 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 1776), Garve (died 1798), Moses Mendelssohn, but, above all, Lessing, the two Schlegels, in particular A. W. Schlegel,

Köppen, the truly popular Claudius (Wandsbecker Bote), Voss, Arndt, Görres and others; in the proper oratory style, Gedike, Niemeyer, Jacobs, Delbrück; in the treatment of particular branches of science, Feuerbach, Zachariä; 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 every thing foreign, every mere accidental modification, we shall find that German poetry is characterized by depth of feeling, truth, and a 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 literature.*

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 this kind, but without sufficient grounds. If any 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. Ottfried's Harmony of the Gospels, in rhyme, 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 III, king of Neustria, over the Normans (881). From the time of the emperor Henry IV, we have the hymn in honor 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, prevails.

II. The reign of the Suabian 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 *Suabian age*, in the history of poetry, on account of the Suabian origin, both of the Hohenstaufen emperors and the best poets of the time, and on account of the universal prevalence of the Suabian 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 connexions with Italy and France, in particular, 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 developement of poetry in this period. German emperors and princes were themselves Minnesingers (q. v.); 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, amatory poets, begins with Henry of Veldeck (1170); and the names of almost 300 poets, who, during this short period, sang of love, the ladies, and the honors of knighthood, are known to us. A collection made by Rudiger von Manessa, in 1313, contains the works of 140 of them (Zurich, 1758—59, 2 vols., 4to). The most celebrated are Wolfram of Eschenbach, Walter von der Vogelweide, Henry of Ofterdingen, Hartmann of Aue, Ulric of Lichtenstein, Godfrey of Strasburg; and one of the latest is Conrad of Würtzburg. Most of the Minnesingers confined themselves to the subject which their name denotes. They sung 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 Theodoric, king of the Ostrogoths. The principal poems of this kind are the *Niebelungenlied* (q. v.), a romantic epic of great merit, both in regard to the plan and execution; and the *Heldenbuch* (q. v.), composed by different authors, and founded on traditions of the highest antiquity. The foreign materials are mostly of Provençal, Norman and British origin. They consist

of traditions relating to Charlemagne and his paladins, and king Arthur and his round table, and the *san graal* (the plate from which the Savior ate the last supper, and which afterwards received his blood). Among the poems of this series, are Wolfram of Eschenbach's *Markgraf von Narbonne*, *Titurel* and *Parcival*; Godfrey of Strasburg's *Tristan*; Hartmann's *Iwain*, 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 Veldeck's *Eneid*, and the Trojan War, by Conrad of Würtzburg, 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 the poetry 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 Renner* of Hugh of Irymberg (in 1300), and the fables of Boner, entitled *Der Edelstein* (1324). About the middle of the 14th century, the schools of the Mastersingers were formed, particularly in the cities of Mentz, Nuremberg and Strasburg. These schools partook of the nature of academies and of *guilds*, and the art of poetry degenerated to a mere mechanical labor. Nevertheless, there were, among the Mastersingers, men like Hans Sachs, and before him, Hans Rosenplüt and Hans Folz, 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 humor. 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 Renard the Fox, by Henry of Alckmaer; the *Narrenschiff* (Ship of Fools), by Sebastian Brand; Thomas Murner's *Narrenbeschwörung* (Conspiracy of Fools), and *Schellenzunft*, Rollenhagen's *Froschmäusler*, and the writings of John Fischart. Unconnected with these schools are many popular songs, produced in the 13th 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 14th and 15th 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 measure, the degenerate productions of the Mastersingers; as instances, may be mentioned the excellent war songs of Veit Weber. In the 17th century, the revival of learning, and the decline of the national prosperity, were equally injurious to this kind of poetry. In the 15th and 16th centuries, epic poetry began to assume an allegorical and historical character, as, for instance, Melchior Pfinzing'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*, *Magalone*, the reading of which is the delight of the lower 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, he stands between this and the former period. His hymns 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 Weckherlin 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 Boberfeld (born at Buntzlau, 1579, died 1639). He endeavored 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; yet he was contented with imitating the French, and their imitators, the Dutch poets. He introduced the use of quantity, instead of framing his verses merely with reference to the 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 nu-

merous followers, many of whom are religious poets, the most distinguished are Paul Flemming (1606—40), Sim. Dach (1605—59), A. Tscherning (1611—59), Paul Gerhard (1606—76), F. von Logau (1604—55), A. Gryphius (1616—46), John Rist (1607—67), George Phil. Harsdörfer and Joh. Klai, the founders of the Order of Flowers. The 30 years' war destroyed, in a great measure, the German national character and feeling. In the midst of its desolation appeared two poets, full of patriotism and mystical enthusiasm, both Jesuits. The first, Jacob Balde (1603—62), 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 fruchtbringende* (the fruit bearing), founded 1616, by prince Louis of Anhalt; 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 endeavored to hide his want of genuine feeling by a revolting sentimentality. The same false taste also wasted the poetical talents of Daniel Gaspar von Lohenstein (1635—83), to whom fire and originality cannot be denied, notwithstanding his conceited and antithetical style. His novel *Arminius and Thusnelda* unites uncommon vigor 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 Banise*. This mania lasted till the middle of the 18th century, and was ineffectually 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 Gunther, was able to sustain itself above the general deluge. Gottsched endeavored to purify the language from foreign additions; but, on the other hand, he deprived 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 endeavored to revive the German poetry of the middle ages. Albert von Haller supported this school by his vigorous poems, abounding in thought. Gottsched'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. Cramer (died 1788), Chr. Furchtegott Gellert (died 1769), with his fables and sacred hymns; G. W. Rabener (died 1770), known by his satires; F. W. Gleim (died 1803), more successful in his war songs than in his anacreontics; Chr. F. von Kleist (died 1759), I. P. Uz (died 1796), F. W. Zachariä (died 1777), a satirical poet, not without wit and imagination. Frederic von Hagedorn (died 1754) was distinguished for an easy and natural style and refined taste; Solomon Gessner, the creator of a new idyllic 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 in their just esteem for antiquity, and an independence and originality of genius; they were Lessing, Klopstock and Wieland. G. F. Lessing (born 1729, died 1781), with his clear, classical understanding, exposed foreign and native absurdities in taste, and exhibited, in his own productions, an example of the manner in which original thoughts adopt appropriate forms, without imitation of any kind. He is the founder of the national German drama, and of German criticism. F. G. Klopstock was taught by the ancients, that there is no true poetry without patriotism and religion; the former he derived from the German history of early times; with the latter he was inspired by the holiest and highest conceptions of Christianity, which produced his *Messias*. He also used the perfect metrical forms of the ancients, and imparted to his native language a high degree of dignity and correctness. Christian M. Wieland (born 1733, died 1812), an imitator neither of the Attic style, nor of the French taste, called to his aid the genius of grace, which inspires the former, and the natural facility which prevails in the latter, to give effect to the creations of his own rich and inexhaustible

imagination. His muse, though often sensual, often verbose, is full of natural grace and warm feeling. He contributed a great deal to give to the German language a greater pliability and ease. The introduction of Shakspeare into Germany could not but produce a decisive influence, after the revival of a taste for the earlier German poetry and the old English ballads. The growing romantic tendency manifested itself in many poets of the *Göttingen-Union*, as it was called, in the ballads of Bürger, the elegies of Hölty and in the poems of the counts of Stolberg. The latter, however, showed the influences of Homer and the Greek tragedians. Their friend Voss (born 1751) was unfortunate enough to forget, in his love for the ancient classical poetry, that its chief merit consists in its living spirit, and accommodation to the character of their times; but his translations of Homer improved the metre and displayed the richness of the German language, and his idyllic poetry, though often unnatural in its Greek dress, is not wanting in dignity and beauty. Herder, Schiller and Göthe next appear on the German Parnassus. Herder's romantic poetry was drawn from every time and nation. Witness his translation of Balde, his Cid, his Voices of the Nations, his Legends, as well as the poetry in his critical and other works. Schiller followed the ideas of Klopstock, but he gave them shape and body. His inspiration, instead of pervading the distant heavens, and representing the conversations of God and the seraphs, exhibited the struggle of human virtue and human will with life and fate. His ideals are as holy and elevated as Klopstock's, but they appear clothed in reality and truth. It has been objected to him that the poetical is too often lost in the philosophical. In German tragedy, his dramatical works are undoubtedly the first. In comparing Göthe with Wieland, we hardly find any other points of resemblance than their grace and fulness, their liveliness and ease; but, in Wieland, this appears to be owing principally to the happy temper of the poet, and his continual study of Greek and French models, while, in Göthe, it is owing to the strength with which his bold and penetrating spirit pervades the unlimited variety of nature and the hidden recesses of the human heart; to the harmony with which his rich and refined feeling echoes every voice, every movement of the living world, and finds, in his bright and abundant imagination, the means of the most simple and striking representation. One thing, however, is wanting in Göthe's productions. He does not set forth strongly the moral dignity of man, the power with which his spirit opposes the accidents of life. The varied play of human passion he portrays in a masterly manner. With these great names, the age has produced many other poets, of whom we will mention only the most eminent, or those who had at least their period of distinction. Matthison charmed by his tender pictures of nature. The poetry of Salis was more vigorous. Tiedge is known by his *Urania*, in six cantos; A. Schlegel, by his excellent translations of Shakspeare, and Calderon, and many original pieces of much merit; Claudius, by his popular songs and religious hymns. Of the humor, wit, genius and virtue of Jean Paul Friederich Richter, Menzel says rightly, "No one had so much power to do ill, and no one was in fact so pious and childlike." Ludwig Tieck possesses poetical resources hardly inferior to Göthe's; and his productions, moreover, are distinguished for virtue and purity as well as for poetical spirit. He is, moreover, one of the most learned commentators on Shakspeare. Novalis, to whom the world was one great poem, wrote sacred hymns of the most intense feeling and the highest spirit. Ernest Schulze, at an early age, was the author of two romantic epic poems, the Enchanted Rose and Cecilia. Full of the spirit of the war of independence, in which he lived and died, was the patriotic Theodore Körner, so celebrated for his war songs and his tragedies, which breathe the spirit of Schiller, as well as for his chivalrous death. (See *Körner*.) Max. von Schenkendorf was, like him, a patriotic and productive poet; Friederich Rückert, a poet of the most refined and abundant imagination; Ludwig Uhland, a genius deep, rich and unassuming: his poems breathe the true spirit of romance. He endeavored to make German tragedy more national. Among the romantic modern poets is also distinguished Gustavus Schwab. Gries and Streckfuss have become celebrated as translators of Tasso and Dante. As dramatic poets, we may mention, besides those already named, Werner and Müllner, Grillparzer, Houwald, Auffenberg, Klingemann, Raupach, Immerman; in comedies and operas, Mahlmann, Von Maltitz, Ohlenschläger (a Dane), Weissenthurn, Steigentesch, Schmidt, Heinrich von Kleist, Schütz. The dramatical muse of Kotzebue was fertile, but without dignity, and frequently

without good morals. Iffland was the author of numerous family pieces. Whether the Germans have a national theatre has been doubted by many even among themselves. It seems, indeed, that, notwithstanding the many excellent dramatic works which they have produced, the difference in their form and spirit indicate a deficiency in the causes which should give the stamp of nationality to the productions of the German theatre. That community of feeling and spirit in a nation, which are necessary to give a strongly marked character of individuality to its drama, are difficult to be found amid the political division of the present time. The sources of common interest must be looked for in the earlier history of Germany, under the emperors, and in the middle ages. But the attempts which have been made by Uhland and others are too few and too recent to enable us to judge of the prospect of their success. A few words remain to be said on the sacred poetry of the Germans. During all the aberrations and changes of taste in the other branches of poetry, this one has retained its dignity, except, perhaps, in the controversial period of the Protestant church succeeding the reformation, when doctrinal distinctions formed the subject of a great number of hymns. After the Catholic poetry of the middle ages, which was written mostly in Latin verse, but often presented the most beautiful exhibitions of devout feeling, the later sacred poetry begins with the vigorous and pious accents of Luther. Paul Gerhard (1607—1676) produced hymns full of feeling and deep piety. Erdmann Neuermeister in the middle of the 18th century, Klopstock, Lavater, Gellert, Schubart, Cramer, Claudius Niemeyer, Herder, form a series of sacred poets. Besides these, there is a large number of others, particularly in the first period of Protestantism. In the first part of the 18th century, there were more than 33,000 hymns in the German language, by more than 500 authors. The essence of deep religious inspiration seems to breathe in the religious poems of Novalis.

German Criticism. German literature is truly the child of the nation. Their political and civil constitution was given to the Germans by their princes and the events of history; their spiritual life they created themselves. A literary court of justice, universally acknowledged as the *académie Française* in France, was inconsistent with the numerous political divisions of Germany. No standard of fashion, no courtly rules, ever held dominion over their literature, and limited the authors to certain favorite forms and manners; and even the universities exerted no domineering influence. From the time of Opitz (q. v.), the poets poured forth their strains in the most various styles, and without being called to account for their irregularity. Exterior influences were required to produce controversy and party spirit. Till then, only frivolous Italian writers, belonging to the end of the 16th and the beginning of the 17th century, were studied and imitated; and from the French literature, with a strange neglect of the first classics, only some worthless novels and poems were selected as models, and even the Dutch imitators of the French were made use of for the same purpose. Besides this, no notice was taken of foreign literature. Almost a century elapsed after Opitz, before a comparison of the existing state of the German literature with the foreign, gave life to German criticism. Bodmer and Breitinger, two Swiss literati, published, in 1721, the Discourses of the Painters, and endeavored, by the exposition of views drawn from the study of Milton's Paradise Lost, to raise the standard of German poetry. Attending more to the substance than to the form, they proceeded in their investigations with as much penetration as impartiality. Professor Gottsched, in Leipsic, inclined towards the French literature, and endeavored to establish, as a chief rule for German literature, that it should be made intelligible to every body by a certain easy, conversational tone of writing. But whilst he strove, with this view, to promote the purity and fluency of the language, and ease of versification, he overlooked the more important subject of the spirit of the literature, and misunderstood the character and the wants of his nation. While Gottsched was thus sinking into insipidity, the Swiss were running into scholastic subtilties; and yet German literature owes a new life, and German criticism owes its foundation, to the disputes between these two parties. The weighty and vigorous ideas in the poems of Haller, and the *Messias* of Klopstock, produced a powerful excitement (1748). If the results of their contentions were not very visible at the moment, yet they prepared the minds of their countrymen for independent judgment, and awakened them from the torpor in which the rules of Baumgarten and Batteux and Du Bos would have left them. Shortly after, Lessing came

forth, one of the greatest critics Germany ever possessed. Without predilection for any nation, and appreciating all, free from prejudices and the fear of men, his honest and profound spirit of investigation strove only for truth; and he united with comprehensive learning, a penetrating and clear judgment, a refined and a striking conciseness in expressing the results, so that he may be considered, at the same time, as the founder of German criticism, and as an excellent model for imitation by critical writers. His own original productions aided the effect of his critical rules. At the same time, the bookseller Nicolai, in Berlin, contributed to the success of his labors, by the establishment of several critical journals. Herder came forth with striking originality and elevation of ideas in his *Kritischen Wäldern* (Critical Woods, 1769). He permitted himself to be limited by no conventional rule, but his luminous understanding was often overwhelmed by his fiery imagination, and his criticism was not seldom deficient in clearness and precision. The Elements of Criticism, by lord Kames, was not without influence, at this time, on the critical spirit of Germany. It was translated into German by Meinhard. Most of the champions of German criticism of this period contended against the French taste; but Wieland, by his *Deutschen Mercur*, gave it currency again, without intending to restore its former authority. Wieland had cultivated his mind too comprehensively and profoundly, and was too familiar with the ancient and modern literature of the most refined nations, to attempt the introduction of any part of the French literature, but what was of a general application, and had a certain relation with the character of German literature. And to this influence it is partly to be attributed, that German criticism, with undiminished life and profoundness, acquired a more varied and general character, and a tone of mild and refined dignity, which manifested itself particularly in the *Allgemeine Literaturzeitung* of Jena, founded in 1785. Kant's *Kritik der Urtheilskraft* (Criticism of the Power of Judgment, 1790) maintained that the judgment of correct taste is independent of excitement and emotion. This principle was acknowledged by Schiller, in his *Reich der Formen* (Kingdom of Forms), but the adherents of the new school did not harmonize in their systems of æsthetics, and the nation, which, in general, in matters of feeling, had never accepted of laws from any school, was not influenced by the new principles. The original Herder, in his *Kalligone*, violently opposed the new doctrine. Schiller's unjust criticism of the poetry of Bürger showed to what the principles of Kant must lead. A spirit of fresh and glowing feeling, opposed to the prosaic views of Kant, and connected with a keenness and bold impartiality, which called back the memory of Lessing, was manifested in the *Athenæum* of the brothers Schlegel, in which deep reflection was united with a keen sense of the beautiful. Their intimate union with Tieck, Bernhardi, Novalis, and other kindred spirits, has had an important influence on German criticism. The deep glance which they cast into the middle ages gave them a romantic and even mystical tendency, which found many friends and a new support in the system of Schelling, but has also had its opponents. Among the latter, Kotzebue, by his periodical publication *Der Freimüthige*, made himself most known; and, in a more dignified way, Bouterwek, in his History of Poetry and Eloquence.

German Philosophy. (See *Philosophy.*)

German School of Art. The war songs, which Tacitus mentions, the armorial bearings on the escutcheons, the early romantic poetry, and the mythology of the Edda, display the early taste of the German nation for poetry and the fine arts. Soon after the introduction of Christianity, art began to extend beyond the mere decorations of weapons, and appears first in churches and monasteries. Here music was first cultivated. Architecture was elevated above the mere purposes of shelter, and Gothic arches and spires towered towards heaven. Poetry was cherished by the monks, who preserved the remains of their heathen ancestors, and made imitations of the Roman and Greek classics. On the miniature ornaments of their manuscripts, and on the altar-pieces of their churches, painting (*see the next division*) fixed her first rude but inspired traces. It is uncertain how much the early Saxon castles were affected by the Byzantine modification of the Greek and Roman architecture, and the ornaments of later periods. It is certain that this bold and living, though often gloomy and severe, style has nowhere else reached the perfection which it attained in the German countries. German painting sprung from the imitation of the Byzantine pictures of saints, but soon rose above the lifeless and dry diligence of that school. From

the 13th to the 15th century was the golden age of German architecture. The German school of painting flourished almost as early, chiefly on the Rhine and in Suabia. The greatest painters, numerous and skilful founders, carvers in wood, wood-engravers, and probably the earliest engravers on copper, and etchers, lived in the 15th century, particularly in the south of Germany. The invention of the art of engraving on copper with the burin, is ascribed to a goldsmith in Upper Germany, who lived 1460, and that of etching to Michael Wohlgemuth, 1434—1519; but neither opinion is sufficiently established. At this period, Germany displayed a great number of Gothic cathedrals, rising from the midst of dark and narrow buildings, the extent and grandeur of which are visible in the cathedrals of Cologne, Strasburg, Vienna, and many other places, whose altars are ornamented with the works of Van Eyk and Albert Durer, and the gloomy majesty of whose aisles received a dim light through the colors of beautiful glass paintings. Sculpture, though less favored by Christianity, produced works like the sepulchre of St. Sebastian in Nuremberg, and the numerous beautiful representations of the holy sepulchre. The castles contained drinking horns, fine carvings on the walls, and other curious and rare works, elaborately finished. The houses of the free and wealthy citizens of the Hanseatic or Suabian league, were often richer in works of art than in means of comfort. The monasteries were filled with productions of art of every kind. The religious troubles in the 16th century put an end to this flourishing period, and, as the German school of art was entirely religious, prevented its farther developement. The art of engraving and cutting in wood survived almost alone; in general, extravagance of ornament usurped the place of beauty. After the storms of the thirty years' war, by which the division of the nation was widened, the Protestant states of Germany were distinguished by the cultivation of learning, particularly of the Latin language, which checked, for a long time, the developement of a national character; but the German character was more injuriously affected by the imitation of the French, in the second half of the 17th century. The academies of art, instituted on the model of the French, could effect little for the creation of a national taste. The galleries of pictures, which were then founded, first awakened the interest of the learned. Lessing, Winckelmann and Mengs had a decisive influence on the direction of German taste, and excited the enthusiasm of amateurs and artists for classic antiquity. Heyne's archæological investigations had a similar influence. This enthusiasm became extravagant, and seduced the artists from the imitation of nature, to an excessive imitation of ancient models, under the alluring title of the *beau ideal* of the Greek form. The events of the times, and the patriotic spirit of Göthe, Schiller and Herder subsequently awakened a zeal for German antiquity, particularly for the religious period of the middle ages. Wackenroder's *Herzensergiessungen eines kunstliebenden Klosterbruders* (1797), the romantic writings of Tieck and Novalis, the criticisms of the Schlegels, the revival of the *Nibelungenlied*, and the collection of the finest old pictures by the brothers Boisserée and others, turned the attention of the young artists towards the romantic. From the beginning of the present century, the German painters in Rome have manifested a tendency to religious and historical subjects in the manner of the old German and the kindred Italian school. Against this tendency many Hellenists, among whom is Göthe, have raised their voice, forgetting that the art of a country must take root in its native soil, before it can attain a natural and vigorous growth. Among the German painters in Rome, who endeavor to unite the spirit of the old religious schools with the classical perfection of form, is Peter Cornelius, of Düsseldorf (see *Cornelius*; also *Cartoon*, and *German School of Painting*). This change has not been confined to painting, though modern art seems to prefer the expression of its religious, romantic spirit by light and colors, whilst the ancients preferred the perfect form of the body. German sculpture was, therefore, chiefly confined, in elder times, to subjects taken from sacred pictures, and, in recent times, has devoted itself principally to imitations of the antique style, and, in this manner, the most excellent works have been produced. The art of engraving was naturally the companion of painting, through all its changes of style. (See *Engraving*.) The principal seats of art in Germany are, Vienna, Munich, Dresden, Berlin, each of which has an academy of art.

German School of Painting. With the decline of the Eastern empire, Byzantine art and science were spread over Europe. In Germany as well as in Italy, and particularly on the Rhine, the gloomy, dry style of the Byzantine school prevailed. Many pictures of this early period have

been preserved; they are distinguished by a gold ground and ornamented glories made of silver, shaded with brown; their colors are bright, without harmony and without life; their outlines are delicate. In Austria, the abbot Reginbald, founder of the monastery of Murr, awakened a taste for the arts about 900. He was followed by St. Thiemo, at Saltzburg, and, in particular, by Gisela, the wife of St. Stephen of Hungary. Louis the Debonnaire received costly works of art as presents from the Byzantine emperor. The Silesian and Moravian princes kept up a friendly connexion with the Greek emperors. St. Methodius, the missionary to the Sclavonians (863), is mentioned as a distinguished painter; and the first Silesian bishops who came from Italy, made use of sacred pictures for spreading their religion. In the churches of St. Elizabeth and of St. Barbara, at Breslau, there are some remarkable pictures of this period. The church of St. Bernardine contains the Hedwig's Table, upon which events in the life of St. Hedwig are painted, in 32 compartments. In Bavaria, Theodore II endeavored to propagate Christianity by the instrumentality of St. Rupert, whom he called from Worms (696); and here also the introduction of painting followed that of Christianity. The arts were most zealously cultivated in the monasteries of the Benedictines. Alfred and Ariram, the latter a monk of St. Emmeran, were the most distinguished Bavarian artists of this time. In Franconia, we find the first traces of art in the time of St. Bruno, who (1042) rebuilt the cathedral at Würtzburg. The emperor Henry II and his queen, St. Cunigund, were patrons of the arts. In the monastery of Heilsbronn, there are several paintings of the time of St. Otho, bishop of Bamberg, who died 1139. Nuremberg deserves to be mentioned as a place where painting and carving in wood were early carried to a high degree of perfection. The churches of the Virgin Mary and St. Sebaldus contain some very old pictures. In Suabia, the monastery of Hirschau was early celebrated for its treasures of art. Many monasteries and churches contained manuscripts with excellent miniatures. In Augsburg, Culm, Nördlingen, there were skilful artists at a very early period. From the time of Charlemagne, many branches of art were practised in the cities on the Upper Rhine. Mentz, Treves, and particularly Cologne, were the most distinguished seats of German art at that time. The period from 1153 to 1330 was not less decisive for German art than for German poetry and language. The eldest German school of painters, which far surpassed the later school of Nuremberg in purity of style, depth of expression and quiet loveliness, flourished at Cologne, in this period. Their pictures are generally on wood, which was first covered with a layer of chalk, and then with linen, upon which were laid another ground of chalk and bole, and, lastly, a gold ground. They preserve their colors with a remarkable freshness. The most celebrated of these works is the altar-piece in the cathedral of Cologne, which some ascribed to William of Cologne, others to Peter Calf. The collections of Wallraf, Boisserée (q. v.) and Bettendorf contain the finest specimens of this period. In Frankfort, the painters on glass were distinguished. The most poetical of the old German masters, Hemmelink, whose works are full of boldness and fire, lived in this period. The builder of the Wartburg, count Louis II, was a patron of the arts in Hesse and Thuringia. The old church of St. Elizabeth, at Marburg, contains many early monuments. Henry I protected the arts in Saxony. There were distinguished artists in the abbeys of Corvey, Minden, Hildesheim and Osnabrück, in Lower Saxony and Westphalia. The number of the monuments of art, from this early time, is incredible. They are found everywhere in Germany, not only in altar-pieces in the churches and monasteries, but also in elegantly ornamented manuscripts, in chasubles embroidered by the nuns, in needle-work and altar-cloths. The emperor, Charles IV, invited many skilful painters to Bohemia, where, as early as 1348, a corporation of painters was formed. In 1450, a distinguished school of painters began to flourish in Breslau, still earlier than that of Nuremberg. Werner of Tegernsee was distinguished for his excellent glass-paintings. In the 15th century, Gleissmyller, Maier, Mächselkircher, Füterer and Zawnhack were celebrated Bavarian painters; in Nuremberg, Hans Traut, Kulenbach, Hans Bäuerlein, and Michael Wohlgemuth, the latter the teacher of Albert Durer, were eminent. A second period of German art begins with Albert Durer (q. v.), who was esteemed by Raphael (from 1471—1528). After having studied in the school of Wohlgemuth, he travelled through Germany, the Netherlands and Italy. Martin Schön may be called the *German Perugino;* his works bear a great resemblance to those of that master. The paintings

of Luke Cranach (born 1470, died 1553) have acquired a particular interest from containing the portraits of the most distinguished persons of his time. The Holbein family produced many skilful painters; the most distinguished was Hans Holbein (born 1495, died 1554). Most of the principal painters of the German school, in the 16th century, were at the same time engravers. Their ideas were truly poetical, but sometimes too allegorical. The execution is finished, but they are deficient in beauty of forms and correctness of outline. Their glowing coloring, the expressive attitudes of the figures, the piety which breathes from their countenances, and, particularly, the spirit of their landscapes and back grounds, must strike every eye. In the 17th and in the first half of the 18th century, art in Germany was in a low state. The German school hardly survived Albert Dürer and Holbein. The difficult and artificial only was admired; nature and spirit gave way to labored ornament. The causes of this decline were the reformation and the thirty years' war. A melancholy period of imitation followed, in which the taste of Louis XIV and the exaggerated modern Italian school was the standard. Although Mengs cannot be considered as a restorer of art, at least for Germany, as his plastic principle was entirely opposed to the spirit of painting in general, and, in particular, to the German school, yet he improved the taste of his time by his severe manner. Most of his scholars, however, inclined to a gaudy and often superficial style. They have produced, however, many pleasing pieces; among them are Maron, Unterberger, Oser and Angelica Kaufmann. William Tischbein, who was born in Hesse, and lived for a long time in Eutin, is among the best artists of our time. His taste is pure, his style noble, his imagination creative and poetical; his sketches from Homer are celebrated. Many young German artists in Rome have lately imitated the manner of the old German school, even so far as to copy its faults. More extensive information on German painting may be obtained in Fiorillo's *Geschichte der zeichnenden künste in Deutschland und den Niederlanden*, and in Göthe's *Kunst und Alterthum*.

German Law (*jus Germanicum*) is at present little more than a name. It signifies merely the civil law in Germany, so far as it is not derived from the ancient Roman, or from the canonical law, or from the laws of particular countries. From the fifth to the ninth century, the laws in the countries held by Germans, consisted of rules which were in part articles agreed upon between the conquerors and the former inhabitants of the Roman provinces, living under Roman laws; in part, a compromise between the old pagan customs and license, and the Christian notions of religion and law; and, in part, compacts between the princes and their military followers, or the community. Such were the laws of the Visigoths, drawn up by king Eurichus, 466—484; of the Salian Francs, towards the end of the 5th century; of the Burgundians; of the Ripuarian Francs; of the Bavarians and Alemanni; of the Frisians; Saxons; of the Angles from the time of Charlemagne; of the Lombards (634—724); of the Anglo-Saxons till the Norman conquest. From the tenth century, the feudal tenure was almost the only mode of holding landed property, and the foundation of public law; but the feudal regulations were so far from constituting a complete and regular system of law, that the Roman law, which was taught in the universities of Lombardy, attracted scholars from all places, and influenced all the legal constitutions. The laws of the native tribes began to be collected systematically after the example had been given by the *Sachsen spiegel* (1215 and 1235), and many cities had their own codes of written or customary laws. The authority of the Roman law continually increased, and influenced public affairs. The native laws, however, continued in the courts, and retained, though greatly diversified, many principles in common. From the 15th century, the provincial legislation became more and more fixed. Almost every county received its *Landesordnung*, that is, a particular system of laws. The institution of the imperial chamber, in 1495, was followed by the *Landesprocessordnungen*, the criminal code of the emperor Charles V, and by criminal laws of separate states. George Beyer first delivered lectures on the German municipal law, at Wittenberg, in 1707. Of modern writers, Mittermaier's *Grundsätze des Deutsches Privatrechts* (Heidelberg, 1823, 2d edition, 1826) deserves mention.

Gerning, John Christian, an entomologist, born at Frankfort on the Maine, in 1745, died in the same place, in 1802. He prepared most of the text of the great work, *Papillons de l'Europe* (Paris, 1780—1792). He left one of the largest collections of insects ever made by a single individual. It contains more than 30,000 specimens, about 5,500 species, and 500

varieties, and is still in Frankfort. His son, *John Isaac*, born 1769, became known to the king and queen of Naples, when they lived in the house of his father, at the time of the coronation of Leopold II. He was afterwards, for a long time, in the Neapolitan service, and went on several missions to foreign courts. In 1818, he was ambassador of the landgrave of Hesse-Homburg, in London, where he published (1821) his splendid work, Views on the Rhine. He is also the author of several other works, both in prose and verse.

GERONA; a strong town of Spain, in Catalonia, at the confluence of the Oña and the Ter, the latter of which flows through the town. It is built in the form of a triangle, on the slope and at the foot of a steep mountain. It is surrounded with good walls, flanked with fortifications, and covered by two forts, erected on the mountain. Besides these, it has five fortified buildings. The streets are narrow and winding; the houses tolerably good. It has a seminary of education on a large scale. The cathedral is rich. It was taken by the French in 1809. Population, 14,000. 40 miles S. Perpignan.

GERONTES (*old men*); magistrates in Sparta, who, with the ephori and kings, were the supreme authority of the state. They could not be elevated to this dignity before their 60th year, at which age the judges in the state of New York are obliged to retire from office. They could not be removed from office, unless in extreme cases. There were 28, or, according to some, 32, of these magistrates.

GERRY, Elbridge, one of the signers of the Declaration of Independence, was born at Marblehead, Massachusetts, July 17, 1744, and was the son of a respectable merchant. He was graduated at Harvard college, in 1762, and subsequently engaged in the same business with his father, at Marblehead. In the controversy between Great Britain and the colonies, he early took a warm interest; and was elected, in 1772, representative from his native town in the general court, or legislature, of Massachusetts. From this period, he continued in public life, almost without intermission. His spirit was nourished by close communion with the Adamses, the Hancocks and the Warrens. In their private meetings at Boston, these patriots concerted resistance to the arbitrary measures of the mother country, and jointly labored, for this purpose, in the exercise of their public duty; and, when separated, they constantly wrote to each other with the same object. In the general court, though one of the youngest of the assembly, Mr. Gerry was placed on the most important committees of correspondence, and distinguished himself in the principal debates. He was next a member of the famous convention at Concord, a provincial congress of Massachusetts, which at once virtually destroyed the royal authority in that state. He was an efficient member of the committees of appeal and safety; and, on the night ereceding the battle of Lexington, he narrowly escaped capture as one of a "rebel" committee of the provincial congress. After the sword was drawn, he was placed at the head of a committee for raising the necessary supplies. Mr. Gerry first proposed, in the provincial congress of Massachusetts, the preparation of a law for encouraging the fitting out of armed vessels, and establishing a court for the trial and condemnation of prizes, and was chairman of the committee appointed for that purpose. This was the first actual avowal of offensive hostility against the mother country, and the first effort to establish an American naval armament. John Adams called it "Gerry's law," and described it as "one of the boldest, most dangerous and most important measures in the history of the new world." In November, 1775, courts were established by the authority of the province of Massachusetts, and the lucrative post of maritime judge was offered to Mr. Gerry, but declined, lest it should obstruct the performance of his general political duties. In the beginning of 1776, he was elected a delegate from Massachusetts to the continental congress. His reputation occasioned his being placed on all the committees of high importance. From his first entrance into congress, until the organization of the treasury board, in 1780, he was generally chairman of the committee of the treasury. Towards the end of the year 1779, he was appointed head of the commission chosen by Massachusetts to meet delegates from other states at Philadelphia, for the purpose of devising some corrective for the sad condition of the currency. When the treasury board was formed, he was made its presiding officer. In February, 1780, a measure of congress, with respect to the assessment of supplies from the several states, gave so much umbrage to Mr. Gerry, as the representative of Massachusetts, that he left his seat, and returned home. While absent, he was selected, by congress, as a member of one of their usual committees to visit the army. Yielding to the solicitations of friends, and satisfied,

at length, with the measures which were adopted on the subject of his remonstrance, he resumed his station in the national councils in 1783. When the definitive treaty was laid before them, in that year, those members who had signed the declaration of independence, of whom three only remained—Mr. Jefferson, Mr. Gerry and Mr. Ellery—were appointed first on the committee to which it was referred. In 1784, Mr. Gerry was reelected a member of congress; and it is said that, at the age of less than forty-two years, he had been longer a member of that assembly than any other man in it. In 1787, he was chosen a delegate to the convention, which met at Philadelphia, for the purpose of revising the articles of confederation. It is well known that great difference of opinion existed in that body, and several members refused to affix their signatures to the constitution adopted by the convention. Among these was Mr. Gerry. For a short time his popularity suffered severely by the course which he pursued; but, in 1789, he was elected a member of congress, and remained in that station for four years, during which time he lent his aid freely to the support of the constitution, since it had received the sanction of the people. On one occasion, indeed, not long after taking his seat, he gave it as his opinion, on the floor of the house, "that, the federal constitution having become the supreme law of the land, the salvation of the country depended on its being carried into effect." After resigning his seat in congress, he retired into private life, and resided at Cambridge until 1797, when he was appointed to accompany general Pinckney and Mr. Marshall on a special mission to France, for the purpose of preventing the threatened interruption of the peaceful relations existing between that country and the United States. The French directory for some time delayed to recognise them, and, in the spring of 1798, ordered Marshall and Pinckney to quit the territories of France, but invited Gerry to remain, and continue the negotiation. He refused to do the latter, but consented to remain, in order to prevent a rupture between the two countries. This course brought upon him great censure in the United States at the time, but, in the words of president Adams, "he alone discovered and furnished the evidence that X, Y and Z were employed by Talleyrand; and he alone brought home the direct, formal and official assurances upon which the subsequent commission proceeded, and peace was made." In October, 1798, Mr. Gerry returned home, and, at the request of the democratic party of Massachusetts, became their candidate for the chair of governor of the state. In 1801, he was again a candidate for the office, but at both periods his opponent was chosen. In 1810, he was a third time a candidate, and was chosen, after a violent contest. The following year he was reëlected, but in 1812 he was defeated. In the same year, he was chosen vice-president of the United States. He did not long discharge the duties of the office. As he was proceeding to the senate house, at Washington, "a sudden extravasation of blood took place upon the lungs, and terminated his life within twenty minutes, almost without a struggle, and apparently without pain." Over his remains a monument of white marble has been erected by congress.

GERSDORFF, Charles Frederic William von, royal Saxon lieutenant-general of cavalry, commander of the orders of St. Henry and of the Falcon, was born in February, 1765, on his father's estate at Glossen, near Lobau, in Upper Lusatia. Having studied at the universities of Leipsic and Wittenberg, he entered the military career, in 1786, as lieutenant of the light horse. In the campaign of 1794—96, he was present at the second battle of Kaiserslautern, and at the battle of Wetzlar. In 1805, he was made brigade-major, and took part in the siege of Dantzic, and in the bloody days of Heilsberg and Friedland, when he received the order of St. Henry. In 1808, he was appointed chief of the general staff in the division stationed at Warsaw, and, soon after, aid to the king. In 1809, he was made colonel, and received from the hands of the emperor the cross of the legion of honor, which had been promised him on the battle-ground of Lintz, by the prince of Pontecorvo, general of the *corps d'armée*, to which the Saxon troops were attached. He was present at the battle of Wagram, and, in 1823, published two letters contradicting the reflections of the emperor Napoleon on the conduct of the Saxon troops, as given in the *Notes et Mélanges* of Montholon and Gourgaud. In 1819, he received the grand cross of the legion of honor, and, in 1822, he was appointed commandant of the corps of cadets. In this office, he delivered regular lectures on different subjects of the military science and the history of war, printed under the title *Vorlesungen über militair. Gegenstände als erste Anleitung zum Studium des Kriegswesens überhaupt und der*

Kriegsgeschichte insbesondere—Lectures on Military Subjects, &c. (Dresden, 1826).

GERSTENBERG, Henry William von, was born in 1737, at Tondern, in Sleswick, and died Nov. 1, 1823. He was employed in the Danish service, both civil and military. His mind was formed by intercourse with Klopstock, Cramer, Sturtz, &c. He was once the favorite of his nation, and was distinguished for his writings, critical and poetical. He wrote many songs and several tragedies. His *Ugolino* was successful, even on the stage.

GERYON; son of Chrysaor and Callirrhoe, a three-headed giant, who ruled, according to some, in Spain; according to others, in the Balearic islands, or in the distant island Erythia, where he possessed numerous and fine herds, which were guarded by the two-headed dog Orthrus and the giant Eurytion. The herds were carried away, and Geryon slain by Hercules (q. v.), in obedience to the command of Eurystheus.

GESENIUS, William, a distinguished biblical critic and Orientalist, the founder of the true critical exposition of the Old Testament, was born Feb. 3, 1786, at Nordhausen, where his father, who was known as a respectable medical writer, was engaged in the practice of his profession. He was educated at the gymnasium of his native town, and at the universities of Helmstädt and Göttingen. His attention, however, was almost exclusively devoted to the study of the Oriental languages; and the necessity which he soon perceived of a better grammar and lexicon of the Hebrew language led him to devote himself entirely to this and to the study of the Old Testament. This he did during a three years' residence at Göttingen, as *magister legens* and lecturer on theology, from 1806 to 1809, when he made preparations for his Hebrew lexicon. In 1809, he was appointed by the government of Westphalia (at the suggestion of the celebrated John Müller), professor of ancient literature in the Catholic and Protestant gymnasium at Heiligenstadt; afterwards, in 1810, extraordinary, and, in 1811, ordinary professor of theology at Halle. Here he attracted particular attention to the study of the Old Testament. He remained at Halle, after the restoration of the university in 1814, as doctor of theology, and wrote his commentary upon the origin, character and authority of the Samaritan Pentateuch, which must always be regarded as a model in this kind of investigation. In the summer of 1820, he made a scientific tour to Paris and Oxford, where he made collections in the Semitic languages, for lexicographical purposes, and also took a copy of the Æthiopian book Enoch, with a view to future publication. His studies had been hitherto devoted, if not exclusively, at least chiefly, to his lexicon and grammar of the Hebrew language. In 1810 and 12 appeared his Hebrew and German Lexicon, 2 vols., Leipsic, and, in 1815, an abridgment of the same (translated into English, by Mr. Gibbs, Andover, 1824). The chief peculiarities of these valuable works, are a just estimation and thorough examination of all the sources of lexicography, a correct apprehension of the relation between the Hebrew and its cognate languages, a complete statement and explanation of the constructions and phrases which are derived from each word, a clear distinction between what belongs to the province of the lexicon, the grammar and the exegetical commentary respectively, and attention to the various kinds of diction. Some excellent remarks, which have had no small effect in the dissemination of right views upon these subjects, are to be found in the prefaces to the lexicon; but a treatise upon the sources of Hebrew etymology, and rules and observations for its use, attached to the 2d edition of the abridgment (1823), is deserving of more particular notice. His *Thesaurus Linguæ Hebraicæ* is a lasting monument of true German learning. With these works are connected the results of his grammatical labors; the chief distinction of which is a full and critical observation and arrangement of grammatical forms, and a correct and analogical explanation of them. The results were first published in a small grammar at Halle (1813), and afterwards more fully in the Grammatical and Critical System of the Hebrew Language (Leipsic, 1817). The History of the Hebrew Language and Writings (Leipsic, 1815) may be regarded as an introduction to this work, and contains many very important researches connected with the criticism of the Old Testament. Besides these, Gesenius labored to facilitate and promote the study of Hebrew in the schools, by the preparation of a work very judiciously designed, and furnished with annotations and a good glossary—his Hebrew *Chrestomathy* (Halle, 1822, 3d edit.). The various excellences of his elementary works, both grammars and lexicons, have been acknowledged in foreign countries. By his version of Isaiah, with a Commentary, philological, critical and historical (Leipsic, 1820—1), he completed his contributions to the dif-

fusion of a correct mode of studying the Scriptures; and we may boldly affirm, that there is no biblical work to which we can compare it. The original has been copied in the translation, with the utmost possible regard to form and meaning, and the commentary is a very satisfactory illustration of the text; but besides the philological illustrations, Gesenius has bestowed great pains upon the historical and antiquarian parts, in order to connect the study of the Bible more closely with that of the classical and Oriental writers. He has illustrated many other important particulars of Hebrew and other Oriental antiquities, in the Universal Encyclopædia of Ersch and Gruber, and has particularly enriched biblical geography in his notes to the German translation of Burckhardt's Travels in Syria and Palestine (Weimar, 1823, 2 vols.). His lectures, which interested and excited his hearers in an extraordinary degree by their eloquence as well as their profoundness, relate to the exegesis of the Old Testament, the introduction to the same, biblical antiquities and ecclesiastical history. In the late controversies between the orthodox and the *Rationalists*, in Prussia, professors Gesenius and Wegscheider, at Halle, were designated by the orthodox as the most obnoxious of their antagonists; and an investigation has been ordered by government into the doctrines of these two learned men.

Gesner, Conrad, surnamed the *Pliny of Germany*, was born of poor parents, at Zurich, in 1516, where he studied, as also at Strasburg, Bourges and Paris, and was a schoolmaster in his native town. Hoping to raise himself from his needy condition, he went to Basle, and devoted himself particularly to the study of medicine. He became, afterwards, professor of the Greek language at Lausanne, and, after a short residence at Montpellier, he was made professor of philosophy, and practised as a physician at Zurich, where he died of the plague, in 1565. Medicine, philology and the history of literature were his departments. He commenced his labors in the last branch by his *Bibliotheca Universalis*, a full catalogue of all writers extant in three languages, Greek, Latin and Hebrew (Zurich, 1545—55, 4 vols., fol.). This work is a monument of immense learning and industry. Natural history was awakened by him from its slumber of centuries. He collected matter in every quarter, either from his own observations or from the works of the ancients. His history of animals must be regarded as the foundation of modern zoology (*Hist. Animalium*, Zurich, 1550—87, 4 vols., fol.). He also rendered a service to science by a complete translation of Ælian. As a botanist, he surpassed all his predecessors or contemporaries; travelled through almost all parts of Europe, to see and to collect; established, notwithstanding his slender resources, a botanic garden of rare plants, supported an artist to draw and paint, and formed the first cabinet of natural history. He was the inventor of botanical arrangement, since he distributed the vegetable kingdom into classes, genera and species, according to the characters of the seeds and flowers. The medicinal properties of plants were not neglected by him, and he made experiments, first upon himself and then upon others. He wrote also on mineral springs, medicines, the nature and relation of languages (Mithridates), and edited and commented upon several ancient writers. He was as modest and obliging as he was learned. For his various and great merits, he was ennobled the year before his death. (See Hanhart's *Life of Conrad Gesner*, Winterthur, 1824.)

Gesner, John Matthew. This scholar was born at Roth in Anspach, 1691, and died in 1761, at Göttingen. After he had completed his studies at Jena, he became, in 1715, co-rector and librarian at Weimar; in 1728, rector of the gymnasium at Anspach; in 1730, rector of the school of St. Thomas at Leipsic; and, in 1734, professor of rhetoric, and subsequently librarian, in the newly erected university of Göttingen. He labored with equal judgment and zeal to improve the course of instruction and the study of the ancient languages. By his editions of the ancient writers on agriculture, of Quinctilian, Pliny the Younger, Claudian, Horace and Orpheus, he introduced an instructive mode of illustrating the ancient classics, and, by his *Primæ Lineæ Isagoges in Eruditionem universam*, he prepared the way for a general study of the sciences. His *Ciceronian* and *Plinian Chrestomathies* are useful school books. He rendered service to the study of the Roman language and literature, by his edition of Faber's *Thesaurus*, and still more by his New Thesaurus of the Roman Language and Literature (Leipsic, 1749, 4 vols., fol.), in which he collected the whole vocabulary of the Latin language.

Gessner, Solomon, born at Zurich, in 1730, where his father was a bookseller and a member of the great council, was intrusted to the care of a country priest, after it was found that his early education

had not awakened his intellect. Here his mind, hitherto depressed by mortifying censures, was aroused. He made advances in the Latin language, and his intercourse with his instructer's son, who read the best German writers, as well as the beauty of the surrounding country, developed his natural disposition to poetry. After two years, he returned to his friends. His intercourse with the most eminent scholars in Zurich served to correct and extend his knowledge, and to enlighten his conceptions. Gessner's father desired that he should undertake the business of a bookseller, and sent him, in 1749, to Berlin, that he might prepare himself for this occupation. He entertained, however, so decided a dislike for the business, that he left his master. As his father endeavored to compel his return, by withholding the money necessary to his support, he maintained himself by executing landscapes, which were well received. In 1762, he published, in four volumes, the poems which he had previously given to the world on different occasions. In 1772, he published another volume of idyls. Their quiet, amiable character pleased many in Germany and in France, where they were translated by Huber; they were received with enthusiasm, and the author was regarded as a poet of the first rank. He is, in fact, the only German writer whom the French poets have repeatedly translated and imitated. From France his fame spread over all Europe. The most popular of his idyls is the Death of Abel, which has been translated into many foreign languages. In the mean time, he was married, and, for the sake of support, devoted himself seriously to painting. His advances were rapid, and his success splendid. His pieces brought high prices, and enchanted by the most delightful representations of nature. The remainder of his life passed quietly and pleasantly, till an apoplectic attack, March 2, 1787, brought it to a close. A certain tenderness and a melodious language are the sources of the success of Gessner's writings; but he is deficient in depth and strength. In landscape painting, he has merits which no age will diminish. His etching is light and powerful; his views are select, wild and romantic; and his trees are particularly fine. Twelve engraved landscapes, published in 1770, are considered among his best works. All who were acquainted with Gessner, describe him as an amiable, modest, high-minded and patriotic man, who was as simple, natural and true in his manners, as he appears in his works. Of his works, the best editions are those of Zurich, 1777—8, 2 vols., 4to., and a small elegant edition, Zurich, 1765—74, 5 vols.; also, one of 1800, 3 vols. His fellow-citizens erected a monument to him. His oldest son, Conrad Gessner, who distinguished himself, first by his pictures of horses and by his battle-pieces, and afterwards by his landscapes, studied at Dresden and Rome. From 1796 to 1804, he lived in England; then in his native town of Zurich, where he died, aged 62, May 8, 1826.

Geyer, Eric Gustavus, doctor, professor of history at Upsal, and royal Swedish historiographer, is distinguished as an orator, poet, historian, philosopher, and even as a musical composer. He was born 1783. He was educated at the university of Upsal. In 1806, he went to England, and, on his return, was appointed professor of universal history at Upsal. He established his reputation as a poet by his *Iduna*, a journal dedicated to the admirers of northern antiquity. Several historical essays in the journal just mentioned, and in the popular *Swea*, proved his talent as a writer of history. In 1825 appeared the first volume of his history of the Swedish monarchy (*Svea Rikes Häfder*), which, in a classical style, contains a profound examination of all the materials relative to the ancient inhabitants of Sweden.

Ghauts. (See *Gauts*.)

Ghent (in French, *Gand*; in German, *Gent*); capital of the province of East Flanders, formerly of the whole county of Flanders, and, at a later period, of the Austrian part of the county; a well-built city at the confluence of the rivers Lys, Lievre and More with the Scheldt (10,000 houses and 60,800 inhabitants). Lon. 3° 44′ E.; lat. 51° 3′ N. Ghent has manufactories of woollen and cotton goods, linen, hats, leather, &c. Rivers and canals divide the city into twenty-six islands, connected by eighty-five bridges; it covers a large area. In the time of Philip of Valois and Charles V, this city could raise 50,000 men; but in the time of Charles V, who was born here, its splendor began to decline. Enormous taxes induced the inhabitants, in 1539, to throw themselves into the arms of Francis I of France. But Francis betrayed them to Charles V, who ordered 30 of the principal citizens to be executed, and many to be exiled, took possession of the public buildings, abolished all the privileges of the city, which were very great, built a citadel, and imposed on them a heavy fine. The cathedral is remarkable. There

are fifty-five other churches, and many other public buildings. The city has some important scientific institutions. A treaty was concluded at Ghent between the U. States and England in 1814. (*See the following article.*)

GHENT, TREATY OF. The war of 1812, between G. Britain and America (see *United States*), was terminated by the treaty of Ghent, Dec. 24, 1814. The British commissioners for negotiating a peace—lord Gambier, Messrs. Henry Gouldburn and William Adams—arrived in that city in August, where the American commissioners—J. Q. Adams, Gallatin, Bayard, Clay and Russell—were already assembled. Excepting the establishment of peace, the treaty made no alteration in the situation of the countries, the terms proposed by the respective commissioners being mutually rejected. The disputed points of maritime law and the subject of commerce were reserved for future discussion. The treaty relates principally to boundaries, but it settles nothing in respect to them; it merely provides for the mutual appointment of commissioners to examine and report to their respective governments on certain disputed points of the treaty of 1783. (See Lyman's *Diplomacy of the United States*, 2d edit., 2 vols., Boston, 1828.)

GHERARDESCA; a family which plays an important part in the history of the Italian republics of the middle ages. It originated from Tuscany, where the counties of Gherardesca, Donoratico and Montescudaio (in the Maremme between Pisa and Piombino) belonged to it. About the beginning of the 13th century, the counts of Gherardesca united themselves with the powerful and rich republic of Pisa, and placed themselves at the head of the people, in opposition to the aristocracy. In the great contest between the Gibelines and Guelfs (q. v.), they joined the party of the Suabian emperors, and fought not less bravely than faithfully under the Gibeline banner. Two of this family—the counts Gherardo and Galvano Donoratico—accompanied Conradin of Hohenstaufen in his unfortunate expedition to Naples, and died with him on the scaffold. This adherence to the interests of the emperors, involved the Gherardescas, as early as 1237, in hostilities with the Visconti, who belonged to the party of the Guelfs; and all Pisa was divided between the two parties. At length the head of this powerful family, Ugolino Gherardesca, resolved to make himself master of his native city (Pisa). Being first magistrate in the republic, and head of the Gibelines in the city, he expected to find but little difficulty in attaining his object. Contrary, however, to the politics of his house and the spirit of his age, he so far coalesced with the Guelfs as to give his sister in marriage to John Visconti, judge of Gallura, and chief of the Guelfs in Pisa. This measure made him suspected by all, and, indeed, the Pisans had a right to look with displeasure on an alliance, the secret conditions of which were the overthrow of the freedom of the city. Visconti agreed to secure to Ugolino the support of the Guelfs in Tuscany, and to furnish him secretly with some mercenaries whom he had collected in Sardinia for his own ambitious purposes. The plan, however, was not successful, on account of the vigilance of the Pisans. Gallura was banished, June 24, 1274, and Ugolino imprisoned. The former armed the Guelfs against Pisa; but his early death at San-Miniato freed the republic from its dangerous adversary. Ugolino, however, who was likewise banished soon after, joined the Florentines and the people of Lucca, at the head of whom he gained several victories over the Pisans, and compelled them to recall him in 1276. Returning to his former plans, he endeavored to secure the friendship of the Gibelines in the city, as well as that of the Guelfs abroad, and his prudence and riches enabled him to succeed but too well. The once vigilant republicans suffered themselves to be lulled into security, and, in 1282, the war with Genoa, so unfortunate for Pisa, afforded Ugolino an opportunity for breaking the power of the people. In the battle of Meloria (August 6, 1284), memorable for the final destruction of the Pisan fleet, and in which 11,000 Pisans were made prisoners by the Genoese, Ugolino betrayed his country, and, by his premeditated desertion, gave the signal for general flight; the rest, giving up all for lost, followed him in confusion. The old enemies of Pisa, the Florentines, Luccanese, Siennese, the cities of Pistoia, Prato, Volterra, San-Geminiano and Colla, in a word, all the Guelfs of Tuscany, on receiving intelligence of this misfortune, determined, by a decisive blow, to annihilate the ancient city of Pisa, the principal support of the Gibelines in Italy. The state, on the brink of destruction, now saw itself compelled to throw itself into the arms of him whose treachery had reduced it to this situation. Ugolino, for a long time secretly connected with the chiefs of the Guelfs, undertook the negotiation with the enemies of the city, which he managed in

such a manner, that he at length saw himself almost at the summit of his wishes. The leaders of the Gibelines were banished; the Florentines took possession of many castles, and Ugolino, under the protection of the enemies of Pisa, ruled the fallen state. He reduced it still further by the surrender of certain castles to the Luccanese, which gave them access to the gates of the city, and by avoiding the conclusion of a peace with Genoa, which would have set at liberty the prisoners captured at Meloria. While he thus oppressed his native country, and gratified his hatred against his enemies, by banishing them, a conspiracy was formed against him in his own family. Nino di Gallura, his nephew, disgusted with his tyranny, united the principal families, both of the Gibelines and Guelfs, the Gualandi, Sismondi, Lanfranchi and others, to rescue Pisa from the degradation into which she was sunk. After a contest of nearly three years, the intrigues of Ugolino succeeded, with the assistance of the archbishop of Pisa, Roger de' Ubaldini, in dissolving this league, and regaining the Gibelines. The Lanfranchi and others forsook Nino di Gallura, who was banished, together with many of his friends. Ubaldini was rewarded for his services by being driven from the public palace by Ugolino, who had promised to share with him the dominion of Pisa. The ambition of the usurper now knew no bounds. The people were oppressed; the lives of his own relations were threatened, and he murdered, with his own hands, a nephew of the archbishop. Such crimes united all against him; and Ubaldini, no less ambitious, artful and cruel than Ugolino, was at the head of the conspirators. He artfully concealed the plan from the tyrant till it was fully matured, and Ugolino's refusal to finish the war with Genoa afforded the opportunity for the breaking out of the conspiracy. On the 1st of July, 1288, Ubaldini caused the tocsin to be sounded. Ugolino was attacked on all sides, and, after an obstinate resistance, which continued till evening, was made prisoner, with two of his sons, Gaddo and Uguccione, and two of his grandsons, Nino, surnamed *le Brigata*, and Aurelio Nuncio. These are the five persons whose horrible death Dante describes in his *Inferno*. Roger or Rugieri de' Ubaldini caused these unfortunate persons to be carried to the castle of Gualandi, since called *Torre della Fame*, and, setting no bounds to his vengeance, after some months, he threw the keys into the Arno, and doomed the prisoners to die by hunger. Poets and artists have often described or represented the terrible end of Ugolino and his companions, and posterity has forgotten his crimes in his horrible punishment. Many of the family of Ugolino were either absent from Pisa, or escaped by flight from this dreadful catastrophe, so that the family of Gherardesca soon recovered its former splendor and distinction, both at home and abroad; and, in 1320, we find Rieri Donoratico Gherardesca at the head of the administration in Pisa. A natural son of this Rieri, Manfred Gherardesca, at the head of the Pisanese garrison, defended Cagliari, with a very inferior force, against Alfonso IV of Arragon, and by his valor rendered the battle of Luco-Cisterna, Feb. 28, 1324, doubtful. The Arragonese did not succeed in taking Cagliari till after the death of Manfred, who died of wounds received in a sally. Another Gherardesca, Bonifazio, was made *capitano* of Pisa in 1329, when that city shook off the yoke of the celebrated Castruccio Castracani, and of the emperor, Louis of Bavaria. His wisdom and integrity gained him the love of his fellow-citizens, and the city was indebted to him for the advantageous peace which it soon after concluded with its old enemies, the Guelfs. He also suppressed a conspiracy of the nobility against the people (1335), and compelled the conspirators to leave the city. In 1340, this exellent man died of the plague, and the grateful Pisans appointed his son Rieri, then only eleven years of age, his successor in the office of *capitano*. In 1348, Rieri also died of the plague, by which the Gherardesca family lost many of its members: the rest withdrew to the family estates in the Maremme, and took little share in the political transactions of Pisa. Philip Gherardesca, born at Pistoia (1730), distinguished himself in music as a composer and piano-fortist. He studied, while young, with P. Martini at Bologna, and in a short time became his most distinguished pupil. He died 1808, at Pisa.

Ghibelines. (See *Guelfs*.)

Ghiberti, Lorenzo; a statuary, born in 1378, at Florence. His ancestors had distinguished themselves in the arts, particularly in that of the goldsmith, in which the Florentines had acquired great celebrity. He early learned from his stepfather, Bartoluccio, an expert goldsmith, the arts of drawing and modelling, and that of casting metals. He afterwards probably enjoyed the instructions of Starnina. Being obliged to leave Florence on ac-

count of the plague, which prevailed there at the end of the 14th century, he was engaged in painting in fresco at Rimini, in the palace of prince Pandolfo Malatesta, when the *priori* of the society of merchants at Florence invited artists to propose models for one of the bronze doors, which still adorns the baptistery of St. John. The offering up of Isaac was to be executed in gilt bronze, as a specimen of the work. The judges selected the work of the celebrated Brunelleschi, that of Donatello, and that of Ghiberti, as the three best; but the two first voluntarily withdrew their claims, giving the preference to Ghiberti. After 21 years' labor, Ghiberti completed the door, and, at the request of the *priori*, executed a second, after almost as long a period. Michael Angelo said of these, that they were worthy of adorning the entrance to paradise. During these 40 years, Ghiberti also completed a statue of John the Baptist for the church Or-San-Michele, two bass-reliefs for the baptistery of the cathedral of Sienna, a statue of St. Matthew, and one of St. Stephen, likewise for the church Or-San-Michele, and, for the church Santa-Maria del Fiore, the bronze reliquary of St. Zenobius, bishop of Florence. All these works are still preserved, and serve to show the progress of Ghiberti. The dryness of the school of Giotto appears in his early works; the later are in imitation of the Greeks, and are marked by continually increasing vigor and firmness. The reliquary of Zenobius and the two doors are, to this day, among the finest specimens of art in modern Italy. Ghiberti also executed some excellent paintings on glass, for the churches Or-San-Michele and Santa-Maria del Fiore. A work by him on sculpture is extant, a fragment only of which has been published by Cicognara. He died about the year 1455. The Calmuc Feodor Iwanowitsch published 12 beautiful etchings of the doors of Ghiberti (1798).

GHIRLANDAIO, Domenico; one of the elder Florentine painters. He was distinguished for fertility of invention, and has therefore been imitated by later artists. He was born at Florence, 1449, and distinguished himself by a more accurate perspective than his predecessors, although he could not divest himself of the habit of using gold, particularly in the ornaments of his drapery. Several of his larger works may be found in the chapel Sassetti, and in the Trinity church at Florence, particularly his historical pieces from the life of St. Francis. His Truth is in the Giustiniani (q. v.) collection. Ghirlandaio had the honor of being the teacher of Michael Angelo. His brothers, David and Benedict, did not equal him as painters. Rhidolfo di Ghirlandaio was a friend of Raphael and the pupil of Fra Bartolomeo.

GHOST, HOLY; according to Trinitarians, the third person in the Holy Trinity; according to the Socinians, a biblical metaphor, to designate the divine influence; according to some German rationalists, the Deity himself, as far as he exercises an influence for spiritual and moral ends in general, and for the support and extension of Christianity in particular. The Roman Catholic church, in speaking of the origin of the persons of the Godhead, declares the Son to be begotten by the Father, and the Holy Ghost to have proceeded from both; yet the Son and Holy Ghost are both eternal, since they are coëternal with the Father. (See *Creed.*) This is the doctrine of the Athanasian creed, and was adopted also by the Lutherans and Calvinists. The Holy Ghost is equal to the other persons of the Trinity. (See *Trinity.*) The Greek Catholic church maintains that the Holy Ghost proceeds from the Father only; and this difference is one of the main points of distinction between that church and the Roman Catholic. The history of the controversy is shortly this: Tertullian and Origen, two distinguished fathers of the church in the third century, maintained that the Holy Ghost was begotten by the Father through the Son, and was superior to all other creatures. Macedonius, bishop of Constantinople, in the middle of the fourth century, denied that the Holy Ghost was equal in essence and dignity to God the Father. The council of Alexandria (362) declared this bishop and his adherents, the pneamatomachists, teachers of heresy; and the general council at Constantinople (381) declared expressly to the whole Christian church, that the Holy Ghost was the third person of the Trinity, proceeding from the Father, and to be worshipped equally with the Father and the Son. Augustine taught, that the Holy Ghost proceeds from the Father and the Son; and the council of Toledo, in 589, condemned all who believed otherwise. This deviation from the former dogma occasioned a controversy, which lasted from the 8th to the 11th century, between the Western or Latin, and the Eastern or Greek churches, and finally led to their complete separation. The Western church and the Prot-

estants maintained that the Holy Ghost proceeds from the Father and the Son, while the Eastern church asserted that it proceeds from the Father alone. The worship of the Holy Ghost as the third person in the Godhead, is, however, common to both churches, and to the Protestant Trinitarians, being essential to the faith in the divine Trinity.

Ghost, Holy, Order of the; an order of male and female hospitallers. Guy, son of William, count of Montpellier, founded this order, towards the end of the 12th century, for the relief of the poor, the infirm and foundlings. He took the vows himself, and gave a rule to the order. Pope Innocent III confirmed the order in 1198, and founded an hospital in Rome, on which all the hospitals of the order on the Italian side of the Alps were dependent: all north of the mountains were dependent upon that of Montpellier. It is not known when the order began to admit females. They take care of young children, educate foundlings, and have several hospitals in France. The dress of both sexes is black, with a double white cross of twelve points on the left breast.

Ghost, Holy, Order of the; the principal military order in France, instituted in 1574, by Henry III. The knights were required to prove their nobility for three descents. The order of St. Michael was the lowest rank. The revolution abolished it, with all the other orders. The Bourbons revived it.

Gianni, Francesco, a poet and improvisatore, born in the States of the Church, in 1760, learned the trade of a tailor, and read Tasso, Ariosto, and other poets, on his work bench. With an excellent memory, and a lively imagination, nature formed him for an improvisatore. He made his first appearance as such at Genoa. His imagination was kindled by the prospects of Italian independence held out by Bonaparte, the founder of the Cisalpine republic, and, in 1796, he went to Milan, where he was chosen a member of the legislative council. In this capacity, Gianni, who had already charmed as a poet, distinguished himself so much as a legislator, that his portrait was ordered to be engraved for the republic. The Spartan expression of his countenance corresponded to his republican ardor. The Russians confined him in Cattaro. After his release (1800), he went to Paris, where Bonaparte granted him a pension of 6000 francs, with the title of *imperial improvisatore*. In the society which the counsellor of state, Corvetto, assembled at his house, Gianni, inspired by the victories of the hero of France, exhibited his talents for improvisation with great applause. Many of these productions were printed with the French translation. In 1811, he accompanied madame Brignole to Genoa. His *Saluti del Mattino e della Sera* was translated into French (Paris, 1813). Since the death of madame Brignole, in January, 1815, he has written nothing but religious poems. Monti, who was jealous of all poetical celebrity, said, "that nature had done every thing to make him a great poet," but he maliciously added, "Gianni has not fulfilled her design." Among many common places and repetitions in the collection of the amatory, heroic and republican poetry of this poet (Milan, 1807, 5 small vols.), we find many passages worthy of the most renowned poets of Italy.

Giannone, Pietro; an author equally celebrated by his fate and by his writings, born May 7, 1676, at Ischitella, in the province of Capitanata (kingdom of Naples). His talents gained him access to the house of the learned lawyer Gaetano Argento, in Naples, in which almost all the distinguished men of the capital were at that time accustomed to assemble. Here he conceived the plan of his most celebrated work, which determined the destiny of his whole life, his *Storia civile del Regno di Napoli* (4 vols., 4to., Naples, 1723), in the composition of which he spent 20 years, and in which the work of Angelo di Costanzo, On Naples, served him as a guide. The severity with which Giannone treated the church, drew upon him the persecutions of the court of Rome, and of the clergy in general; and neither the authority of the viceroy of Naples, nor the protection of the municipality of Naples, of which Giannone had been elected advocate, were able to avert the storm. The priests instigated the people of the city against the man who had exposed the spiritual oppression of the Romish court. The offensive publication was burnt, and the author excommunicated. Giannone therefore quitted Naples (1723), and took refuge in Vienna. Here the protection of prince Eugene, and the intercession of the chancellor Zinzendorff, of count Bonneval, who afterwards became so celebrated, and the chevalier Garelli, then physician of the emperor, procured him a pension. The emperor Charles VI still, however, regarded him with a suspicious eye, and, in 1734, when don Carlos ascended the

throne of Naples, not only was his pension taken from him, but he was obliged to leave Vienna. Giannone now withdrew to Venice, with the intention of continuing the work which he had already begun at Vienna—*Il Triregno, ossia del Regno del Cielo, della Terra e del Papa*, on which he spent 12 years. It is to be regretted, that his misfortunes prevented him from completing it as he had proposed; he brought it down only as far as the 9th century. Some bitter satires against the Roman court, which he had written in Vienna, where the cardinal Pignatelli had released him from the excommunication, were, by the advice of his friends, not published. Giannone was favorably received in Venice, particularly by the senator Angiolo Pisani, but his prospects were soon changed. Having declined to enter into the service of the republic as advocate, and being suspected of entertaining opinions by no means favorable to the pretensions of that ambitious state, in respect to the Adriatic sea, he had, besides, the imprudence to associate too much with the ambassadors of France and Spain. This was sufficient to awaken the jealousy of the most suspicious of all governments. His *Lettera intorno al Dominio del Mare Adriatico ed ai Trattati seguiti in Venezia tral Papa Alessandro III, e l'Imperador Federico Barbarossa*, published a short time before, in favor of the dominion of Venice over the Adriatic, could not remove the suspicions of the senate, and one night (in September, 1735), the *sbirri* of the republic seized him, and the poor author was transported, as a dangerous enemy of the state, beyond the frontiers of the Venetian territory, into the territory of Ferrara. Apprehensive of new persecutions, he took the name of Antonio Rinaldo, and, after a short residence in Modena, Milan and Turin, he retired with his son to Geneva, where he was not only received with respect by the most distinguished men, but also found the most liberal support. He was preparing to publish a supplement to his history of Naples, when, enticed by a villain, he had the imprudence to attend the festival of Easter (1736), in a village of Savoy, where he was immediately arrested and carried to the castle of Miolan, and, afterwards, to the fortress of Ceve, and, finally, into the citadel of Turin. Here he died, at the age of 72 years, a victim of priestly hatred, after 22 years of confinement, which was, part of the time, so strict that he was denied even the sight of his son. His manuscripts were carried to Rome, by the order of the papal court. His attempt to regain his freedom, during the dispute between the courts of Turin and Rome, by writing in favor of the king of Sardinia, had been as unsuccessful as his recantation of the principles expressed in his *Storia Civile*, to which he was persuaded by the treacherous suggestions of father Prever. His *Opere postume in Difesa della sua Storia Civile*, &c., of which the severest passages against the Roman clergy had been published separately at the Hague, in 1738, under the title *Anecdotes ecclésiastiques*, appeared after his death, at Lausanne, 1760.

Giants; people of extraordinary stature. History, both sacred and profane, makes mention of giants. Nothing is more natural, in ages when the past and the future are connected together only by tradition, than that the height of a tall man should be exaggerated every year after his death. In the same way, a small person would dwindle into a dwarf or a pigmy. The same effect which is produced by distance of time is also produced by distance of place, so that a nation of tall men, living on a distant shore, would become, in the tale of the mariner, a race of giants. Nations and individuals, in their childhood, love the miraculous; and any event which deviates from the common course of things, immediately becomes a wonder, on which poetry eagerly seizes; hence the Cyclops and Læstrygons of the ancients, and the Ogres of romance. Instances, however, are by no means wanting, of uncommonly large persons, hardly needing the exaggeration of a lively imagination to make them objects of wonder. According to the Jewish traditions, a people existed before the deluge, of uncommon stature, called the *sons of God*. And at a much later period, when the Israelites sent spies into the land of promise, they brought back word that the sons of Anak, in Hebron, were giants, and that they themselves appeared like grasshoppers before them. The last of this tribe was Og, king of Bashan, conquered by Moses: he had a bedstead nine cubits long and four cubits broad. In the neighborhood of Jerusalem, a tomb was shown, for a long time after, with the inscription, *Here lies the giant Og*. In 1670, a tooth was said to have been found in this grave weighing 4½ lbs. The Jewish commentators make Goliath 11 feet high.

The giants of Greek mythology are believed, by some, to represent the struggle of the elements of nature against the gods, that is, against the order of creation. They

were said to have sprung from the blood of Cælum, which fell into the lap of Terra (the earth). Their mother, indignant at the banishment of the Titans into Tartarus, excited them to revolt against Jove. They hurled mountains and forests against Olympus, disdaining the lightnings of Jupiter. An oracle having declared that the gods could not conquer except by the assistance of a mortal, Minerva called Hercules to their aid. He slew Alcyoneus and Porphyrion, the most formidable of the giants. Apollo and Hercules shot out the eyes of Ephialtes; Bacchus slew Eurytus with his Thyrsus; Hecate and Vulcan killed Clytius with clubs of hot iron; Neptune hurled a part of the island of Cos on Polybotes; Minerva buried Enceladus under the island of Sicily, and flayed Pallas, and made a shield of his skin. The remainder perished by the hands of other deities, by the thunderbolts of Jupiter or the arrows of Hercules. This fable, perhaps, indicates volcanic eruptions, for which the Phlegræan fields, where the chief scene of this struggle is placed, and where the two principal giants were born, were remarkable. Cos and Sicily, which figure in this fable, are also volcanic. Ovid has described the war of the giants in the beginning of his Metamorphoses.

Strabo tells of the skeleton of Antæus, found in Mauritania, sixty cubits long. Pliny speaks of a skeleton forty-six cubits long, laid bare by an earthquake in Crete. In the battle between Marius and the Teutones, at Aquæ Sextiæ, the king of the latter, Theutobochus, is represented as a giant. In 1613, his skeleton was pretended to have been found in Upper Burgundy. A brick tomb was discovered, 30 feet long, 12 feet broad, and 8 feet high, on which was the inscription *Theutobochus rex.* According to tradition, a skeleton was in the grave, 25½ feet long, 10 across the shoulders, and 5 feet through, from the breast bone to the back bone. The thigh bones were four feet long. The bones, the story says, were finally carried to England, and it is not known what became of them. We have similar accounts in the 16th century. Thus Dalechamp pretended to have found a skeleton 18 feet in length; Felix Plater, one of 19 feet, near Lucerne; and Licetus, one in Sicily, 30 feet in length. But it has long been known that these bones do not belong to giants, but to animals of the primitive world, which, from ignorance of anatomy, were taken for human bones. The Guanches, the original inhabitants of the Canaries, were described by a credulous traveller as appearing to have been at least 15 feet long, from an examination of their mummies. Similar accounts were given of the Patagonians; but captain Carteret, who measured several of them, found that most of them were but from 6 feet to 6 feet 5 inches high. The measurements of Wallis agree with this. The ordinary height of men is between 5 and 6 feet, and the greatest deviations from this medium height, in Europe, are found in England and Switzerland. Frederic William I, of Prussia, had such a rage for collecting tall men as guards, that a man of extraordinary height could not escape being made a soldier, whatever was his profession; and it is related that Augustus, king of Poland, a man of good stature, could only reach the chin of the tallest man of the Prussian guards with his hand. (See the article *Giant*, in the *Encyclopædia Metropolitana.* For an account of very corpulent persons, see *Corpulence.*) Very tall persons have commonly a feeble pulse, and do not generally live long.

Giant Beds (in German, *Hünengräber*) are *tumuli*, in Germany, particularly near the coasts of the Baltic and on the island of Rugen. They are of different sizes, and sometimes very large, generally enclosed with stones of such weight as would seem to have required machinery to move them. Earthen vessels, metallic ornaments, sacrificial stones, knives, battle-axes, &c., are sometimes found in them; sometimes they are entirely empty. They are supposed, by some, to be general graves of persons who fell in the battles fought in those countries, between the Vandals and Germans.

Giant's Causeway; a promontory in Ireland, in the county of Antrim, on the north coast, west of Bengore Head; eight miles N. E. Coleraine, 120 N. Dublin. It consists of many hundred thousands of columns, composed of a hard black rock, rising perpendicularly from 200 to 400 feet above the water's edge. The columns, or basaltes, are generally pentagonal, or have five sides, and are so closely attached to each other, that, though perfectly distinct, from top to bottom, scarcely any thing can be introduced between them. This extraordinary disposition of the rocks continues below the water's edge; it also obtains, in a small degree, on the opposite shore in Scotland. The columns are not each of one solid stone, in an upright position, but composed of several short lengths, exactly joined, not with flat surfaces, but articulated into each other, as a ball in a socket, one end of the joint having a cavity of

three or four inches deep, into which the convex end of the opposite joint is exactly fitted. This is not visible till the stones are disjointed. The Giant's Causeway is accounted the greatest natural curiosity in Ireland, and one of the most remarkable of the kind in the world.

Giaour; a Turkish word, meaning *dog*, used by the Turks to designate the adherents of all religions except the Mohammedan, more particularly Christians. The use of it is so common that it is often applied without intending an insult.

Gibbon, Edward; an eminent English historian, was born at Putney, in 1737. He was the son of Edward Gibbon, a gentleman of an ancient Kentish family. After being two years at a private school at Kingston-upon-Thames, he was sent, at the age of 12, to Westminster, where his weak state of health precluded him from making a regular progress in the classical studies of the school. After several changes of situation, in which he was chiefly the object of medical care, his constitution suddenly acquired firmness, and he entered as a gentleman commoner at Magdalen college, Oxford, before he had completed his 15th year. He remained 14 months at Oxford, which he characterizes in his memoirs as most unprofitably spent; and his censure of that university is very strong and unequivocal. To a total neglect of religious instruction he attributes his boyish conversion to the Roman Catholic religion, which was produced by an assiduous perusal of the controversies between the Catholics and Protestants; and, to use his own expressions, as he entered into the field "without armor," he fell before the "weapons of authority, which the Catholics know so well how to wield." Following his convictions, he abjured the errors of heresy at the feet of a Catholic priest in London, and then wrote a long letter to his father, to justify the step which he had taken. The consequence of this disclosure was his immediate banishment to Lausanne, where he was placed under the care of M. Pavillard, a learned Calvinistic minister. By the well-directed efforts of his tutor, aided by his own mature reflections, his new faith gradually gave way, and he was again restored to Protestantism. His residence at Lausanne was highly favorable to his progress in knowledge, and the formation of regular habits of study. The belles-lettres, and the history of the human mind, chiefly occupied his attention; and to this fortunate period of retirement and application, he was chiefly indebted for his future reputation as a writer and a thinker. In 1758, he returned to England, and immediately began to lay the foundation of a copious library; and soon after composed his *Essai sur l'Étude de la Littérature*, in the French language, which, for some years, had been more familiar to him than his own. This work, which was printed in 1761, was a highly respectable juvenile performance, and obtained considerable praise in the foreign journals. He some time after accepted a captain's commission in the Hants militia, and for some time studied military tactics with great assiduity; but he heartily rejoiced when the peace of 1763 set him free. After passing some months in the metropolis, he visited Paris and Lausanne, at which latter place he employed himself in collecting and preparing materials for a profitable journey to Italy. This took place in 1764; and it was at Rome, as he himself informs us, on the 15th of October, in that year, as he sat musing among the ruins of the capitol, "while the barefooted friars were singing vespers in the temple of Jupiter," that his idea of writing the Decline and Fall of the Roman Empire entered his mind. He had previously thought of the history of the republic of Florence, and of that of the Swiss liberty, in the last of which he had made some progress, but he subsequently committed the MS. to the flames. In 1770, he first tried his powers in his native tongue, by a pamphlet in refutation of Warburton's extraordinary hypothesis concerning the connexion of Virgil's fabled descent of Æneas with the Eleusinian mysteries, entitled Critical Observations on the sixth Book of the Æneid. It received great commendation, particularly from professor Heyne, and proved a conclusive refutation. In 1774, by the favor of his kinsman, Mr. (afterwards lord) Eliott, he obtained a seat in parliament for the borough of Liskeard, and was a silent supporter of the North administration and its American politics for eight years. In 1776, the first quarto volume of his Decline and Fall of the Roman Empire was given to the public, which at once rivetted general attention; the first edition going off in a few days, and a second and a third being scarcely equal to the demand. Of all the applause he received, none seemed to flatter him so much as the spontaneous suffrages of Hume and Robertson. The prosecution of his history was for some time delayed, by his complying with the request of ministers to answer a manifesto which the French

court had issued against Great Britain, preparatory to war. This he very ably executed, in a *Mémoire Justificatif*, composed in French, which was delivered in a state paper to the courts of Europe; and for this service he received the appointment of one of the lords of trade. In 1781 appeared the second and third volumes of his history; and at a new election he lost his seat for Liskeard, but was brought in by ministerial influence for the borough of Lymington. On the retirement of the North administration, he lost his appointment, by the dissolution of the board of trade, and immediately formed the resolution of retiring to his favorite Lausanne, which plan he put into execution in 1783. Here, in the course of four years, he completed the three remaining volumes of his history, which were published together in April, 1788. The storms of the French revolution, which he regarded from the first with fear and aversion, gradually lessened his attachment to Lausanne; but his return to England, which took place in 1793, was hastened by his solicitude to sympathize with his friend, lord Sheffield, under a heavy domestic calamity. He spent some months with that nobleman; when a disorder, which he had endured for three-and-twenty years, terminated in a mortification, that carried him off on the 16th January, 1794, in the 67th year of his age. Mr. Gibbon was fond of society, and possessed, in an eminent degree, the manners and sentiments of a gentleman. It is as the student and historian that he principally claims attention; and in these capacities the universal acknowledgment of the world has allowed him the highest rank. In 1796, his friend, lord Sheffield, published two quarto volumes of his miscellaneous works, of which the most valuable part is the Memoirs of his Life and Writings, which are written with much apparent frankness. The merits and defects of his great history, its elegance and research, as well as its occasional indecency of allusion, and its sneers at revealed religion, are too well known to need comment. Niebuhr, the celebrated Roman historian, professes to wish only to bring down his history to the commencement of Gibbon's.

GIBELINES. (See *Guelfs*.)

GIBRALTAR, a rocky promontory, from 1200 to 1400 feet above the level of the sea, lies at the southern extremity of the Spanish province of Andalusia, at the entrance from the Atlantic to the Mediterranean, on a strait about 15 miles across; lat. 36° 7′ N.; lon. 5° 19′ 4″ W. It is seven or eight miles in length, from north to south, and, in the widest part, not half a mile in breadth. It is every where precipitous, and in some parts perpendicular. Nature and art have conspired to make it an impregnable fortress. It remains in the hands of the English. The great works are on the western front. The other sides, from their shape, bid complete defiance to attack. The name is formed from the Arabic words *gibel al Tarif* (the height, or rock of Tarif), since Tarif Abenzaca, the general of the caliph Walid, at the time of the irruption of the Arabs into Spain (A. D. 711, et seq.), landed at the foot of this rock (known as the *Calpe* of antiquity), where he took the town of Heraclea. This town undoubtedly owed its name to the story that this rock, and the corresponding African promontory, were called by Hercules his *pillars*, to indicate the termination here of his various adventures. The support of this fortification is a yearly expense of 40,000 pounds sterling. It has a numerous garrison. It was taken from the Arabians by Ferdinand, king of Castile, in 1302. In 1333, they retook it, and were finally deprived of it in 1462, by Henry IV. The upper wall of the Moorish castle, upon the north side of the rock, which was surrounded by a triple wall, in the Moorish fashion, has been suffered to remain to protect the town against artillery upon the landward side. The site of the lowest wall is occupied by the large battery, which was erected to protect the gate upon the north: that of the second, or middle wall, is occupied by private warehouses. The German engineer Speckel, of Strasburg, in the reign of the emperor Charles V, substituted, for the old Moorish fortifications, works in the European style. In the war of the Spanish succession, the Spaniards were obliged to surrender this fortress, Aug. 4, 1704, to the British admiral Rooke, and prince George of Darmstadt, then imperial field-marshal and viceroy of Catalonia, who appeared unexpectedly before this fortress in May of the same year. King Philip of Anjou caused it to be attacked upon the land side, Oct. 12, 1704, with 10,000 men, at a point where the fortification is connected with the main land by a narrow sandy neck, so fortified by the English that the Spaniards called the works *puerta de fuego* (the gate of fire). At the same time, Gibraltar was blockaded by sea by admiral Poyes, with 24 sail of vessels. Just when it was reduced to extremity, it received assistance from the English and Dutch

fleet, under admiral Leake. The blockade by land continued without any results, till the conclusion of the peace of Utrecht, in 1716. Since this time, nothing has been omitted by England to render this fortress, which is the bulwark of her Mediterranean trade, absolutely impregnable. As, however, the increasing value of the place rendered the possession of it more desirable to Spain, the siege of it was commenced March, 7, 1727, but raised, upon the approach of admiral Wager, with eleven ships of the line. Spain then offered two millions sterling for the delivery of the place, but in vain; and by a compact at Seville, in 1729, it agreed to renounce all its claims upon it. Still it omitted nothing to prevent all entrance into the fortification, and to separate it from the main land, by constantly strengthening the lines of St. Roch and Algeziras. But it was easy to supply the inhabitants and garrison by sea; and a fresh spring flows from the rock; the rain, too, forms collections of pure and sweet water in the cavities of the cliffs. Cows, sheep and goats find in this southern clime a constant supply of green food upon the rocks, and every spot of fertile soil is filled with wild and cultivated fruit trees. In the war which broke out between England and Spain, in 1779, the last attempt was made for the recovery of Gibraltar. (See *Eliott.*) It was secured to England by the peace of 1783. Since that time, in the various English and Spanish, and also French wars, Gibraltar has only been blockaded on the land side. The town of Gibraltar stands not on the promontory, but at its foot, and on the north-west side. Its bay is nine miles long and five broad, and forms a convenient naval station. Though fortified in itself, its chief protection is derived from the batteries on the neighboring heights, which sweep both the isthmus and the approach to the town by water. The last siege displayed the power of artillery in every shape. The town was then almost entirely destroyed; but it was afterwards rebuilt, on an improved and much enlarged plan. The houses have flat roofs, and large bow windows: they are generally painted black, with a white strip to mark each story or floor: the black is intended to blunt the dazzling rays of the sun. One large street traverses almost the whole town: it is nearly half a mile in length, and full of shops. In other parts, the inhabitants are too much crowded, as was fatally exemplified in the rapid spreading of the contagion in 1804. The population of the town, exclusive of the garrison, is above 12,000, partly British, partly Spaniards, Italians, Jews, and even Moors, all attracted by mercantile enterprise. The place is a general *entrepot* for the manufactures of England, and other produce, such as sugar, rum, tobacco, rice, flour, wine, fruits, silk and wax. The chief public buildings are the navy hospital, the victualling office, the barracks, and the house of the lieutenant-governor. The places of worship are an English church, a Catholic chapel and three synagogues. Here is also a small but elegant playhouse; and, what is of great importance to officers stationed in this secluded spot, a garrison library. 16 miles N. Ceuta, 70 S. Seville.

Gibraltar (*Straits of*), form an entrance from the Atlantic into the Mediterranean. The narrowest part is a little to the west of Gibraltar, and fifteen miles across. The ancients called them *Gaditanum* and *Herculaneum Fretum*, or *Straits of Hercules.* A strong and constant current flows into the Mediterranean from the Atlantic ocean, in the middle of the straits, while two feeble lateral currents issue from the sea. But if an anchor be cast in the straits, a lower current is found to prevail, setting out into the ocean.

Gichtel, John George; a mystic and fanatic, born in 1638, at Ratisbon, in Germany. In his 16th year, he pretended to have divine visions. He then studied law, and seemed to have forgotten his visions in his professional activity; but he afterwards resumed his pretensions, owing, perhaps, to domestic troubles, the consequence of an unhappy marriage. He renounced his fortune, and went to join Brekling, a similar fanatic in Holland, in order to fit himself for the duties of a missionary to America. He then returned to the south of Germany, but, his doctrines having produced great disturbances at Ratisbon, he was carried beyond the frontiers, and went to Vienna. Thence he returned to Holland. Here he had some misunderstanding with Brekling, and was banished from several places. Many of his followers, also, became opposed to him, on the ground that he promoted idleness, by preaching entire dependence on divine providence; and, having depended on them for support, was soon reduced to the greatest misery, and is said to have attempted several times to destroy himself. He died at Amsterdam, in 1710. Two years before his death, he is said to have lost two nails of his right foot, in the place of which grew out a sort of claws, which he considered to be eagle's claws, and indications of the approaching breaking out of the spirit. Gichtel wrote several works, which were

published by himself or his pupils. His followers call themselves the *Angelic Brethren*. It would have been unnecessary to notice this obscure fanatic, had not mysticism made so much progress in Germany, that even Gichtel's works have been drawn from a merited oblivion.

GIDEON (*Hebrew*, meaning *a destroyer*); the son of Joash, of the tribe of Manasseh, divinely called to deliver the Israelites from the oppression of the Midianites. Having effected their deliverance, he was chosen judge of Israel. (See *Judges*, vi, vii, viii.)

GIEBICHENSTEIN; a village on the Saale, half a league from Halle, with 550 inhabitants. Being so near that ancient university, charmingly situated, distinguished by the ruins of an ancient castle, which is connected with many historical reminiscences, Giebichenstein has, with the Germans, a kind of classical dignity. Whoever has studied at Halle, remembers some happy hours spent at Giebichenstein.

GIESSEN; capital of the principality of Upper Hesse, belonging to Hesse-Darmstadt, on the Lahn; 50° 25′ N. lat., 8° 43′ E. lon., with 5500 inhabitants. A university was founded here in 1607. Its scanty funds, the vicinity of the university of Marburg, and the division of the territory of Hesse-Darmstadt, have prevented it from ever having much over 500 students. The annual income is now about 60,000 guilders. The library has 27,000 vols. In 1823, there were 22 ordinary and 5 extraordinary professors, and 11 unofficial lecturers.

GIFFORD, William; a celebrated critic and satirist, the founder, and for a considerable period the editor, of the Quarterly Review. He was born at Ashburton, in Devonshire, in April, 1756. His father, a plumber and glazier, having dissipated his property by extravagance and intemperance, died when the son was about 12 years old; and William fell under the guardianship of a person who sent him to sea with the master of a coasting vessel, but in a few months removed him from that situation, and apprenticed him to a shoemaker at Ashburton. Disgusted with this occupation, and possessing a strong taste for study, he was fortunate enough to attract the notice of Mr. Cookesley, a surgeon of the town in which he resided, who raised a subscription to purchase his freedom for the latter part of the term of his indentures, and to pay for his education. After having passed two years at school, he was, through the exertions of the same friend, supplied with the means of continuing his studies at Oxford, where he also obtained the office of Bible reader, at Exeter college. While at the university, he undertook a poetical translation of the Satires of Juvenal, but the death of his patron, Mr. Cookesley, interrupted the progress of the work; and, at length, through a fortunate accident, he was introduced to earl Grosvenor, and quitted Oxford to reside in the family of that nobleman. He afterwards travelled on the continent, with lord Belgrave, for some years, and, on his return to England, settled in the metropolis, devoting his time to literary pursuits. In 1791, he published The Baviad, a poetical satire; and, in 1794, appeared The Mæviad, a severe animadversion on the degraded state of the drama. These works, though virulent and coarse, display much critical ability. In 1797, he became editor of the Anti-Jacobin newspaper—an office which involved him in a quarrel with doctor Wolcot, against whom he published a pamphlet in verse, entitled An Epistle to Peter Pindar. His translation of the Satires of Juvenal was published in 1802, and is executed in a manner highly creditable to his abilities. His next publication was an edition of the plays of Massinger, with notes, and a life of that dramatist; and he afterwards edited, in a similar manner, the works of Ben Jonson, Ford and Shirley. In 1809, he commenced the publication of the Quarterly Review, of which he continued to be conductor till 1824, when the infirmities of age obliged him to resign. His death took place, December 31, 1826, at his residence at Pimlico, near London, and he was interred on the 8th of January following, in Westminster abbey. Besides the works already noticed, he was the author of a translation of the Satires of Persius. He enjoyed an annuity from lord Grosvenor, and held the office of paymaster of the band of gentlemen pensioners, with a salary of 300*l.* a year; he was also, for a time, comptroller of the lottery, with a salary of 600*l.* a year.

GIG. (See *Boat*.)

GIGLI, Jerome, was born at Sienna, Oct. 14, 1660. His lyric and dramatic productions met with universal success. His modified translation of the Tartuffe, his attacks upon the academy Della Crusca, and his caustic wit, applied to such a variety of subjects, and so many people, involved him in difficulties. He was compelled to retract, at Rome, all he had said; and he died, Jan. 4, 1722, so poor that the expenses of his burial were defrayed by some charitable monks. A short time before his death, he burned many of his smaller writings, the overflowings of his bitter humor. The works which he

has left are numerous, and part of them very spirited and witty. This is particularly the case with some fictitious historical and biographical memoirs, which even deceived Apostolo Zeno, who gravely noticed them, as authentic works, in the *Giornale de' Letterati d'Italia.* The character of Gigli was frank and bold, and opposed to all hypocrisy and pretence. As a member of the Arcadians at Rome, he bore the name of *Amaranto Sciatidico.*

Gilbert, sir Humphrey; an English navigator and maritime discoverer, in the reign of queen Elizabeth. He was born in Devonshire, about 1539, and studied at Eton and Oxford. Adopting the military profession, he served with reputation on various occasions. Possessing a strong propensity for speculation and enterprise, he turned his attention to a scheme for exploring the Arctic seas, relative to which he published A Discourse of a Discovery for a new Passage to Cataia (1576; reprinted in Hakluyt's collection of voyages, vol. iii). In 1578, sir Humphrey Gilbert obtained from the queen a patent, empowering him to discover and colonize in North America any land then unsettled. He made a voyage to Newfoundland, but soon returned home unsuccessful. In 1583, he sailed again with a small fleet, and, having landed on Newfoundland in the beginning of August, he took possession of the harbor of St. John's. Shortly after, he embarked in a small sloop to explore the coast, and was lost in a storm.

Gilbert; the name of two French poets:—1. Gabriel Gilbert, lived in the 17th century, was a contemporary of Corneille and Racine, whom he preceded in his dramatic writings, which were, however, thrown into the shade by theirs, although it appears that these two great poets were not ashamed to borrow from him. He was secretary to the duchess of Rohan; then lived with Christina, queen of Sweden, who was wont to call him *mon beau génie*, appointed him Swedish resident at the court of France, and loaded him with favors. After the death of Christina, and after his pieces had ceased to please the public, he sunk into poverty and oblivion. Besides a great number of poems, we have fifteen dramatical pieces of his. Cardinal Richelieu allowed some of his own verses to be inserted in his tragedy of *Téléphonte.* Gilbert also wrote an Art of Love, in imitation of Ovid.—2. Nicholas Joseph Gilbert, born in 1751, was inclined to satire; and some French critics call him the *French Juvenal.* He joined the party who opposed the *philosophers*, so called, with zeal. His satires, The Eighteenth Century, which he addressed to Fréron, and My Apology (in 1778), contain passages so striking and powerful, as to remind us of the Roman satirists. There is a collection of his poems, in two volumes. He died, deranged, in 1780.

Gild; a corporation. (See *Guild.*)

Gildas, Sapiens; a British ecclesiastic and historian of the sixth century, of whom little is known. There is extant a declamatory diatribe ascribed to Gildas, which has been repeatedly published under the title of *Epistola de Excidio Britanniæ, et Castigatio Ordinis Ecclesiastici.* This is a violent invective against the whole British nation. Some doubts have arisen as to the authenticity of this epistle, the unsparing severity of animadversion with which the Britons are treated being considered as more characteristic of a foe to their race and nation, than of the alleged author.

Gilding is the art of applying gold leaf or gold dust to surfaces of wood, stone, metals. The Egyptian monuments present numerous traces of the existence of the art in Egypt. The process was nearly the same with that now used. The artists employed a sort of paste, like that now used in gilding wood, even for gilding metals; but they were also acquainted with the art of applying the gold directly to the substance to be gilt. The Persians were also acquainted with this art, as appears from the ruins of Persepolis. The Greeks and Romans employed gilding for many purposes. The Greeks used to gild the hoofs and horns of victims. The practice of gilding statues prevailed in the infancy of the art of sculpture, and was never entirely dropped by the ancients. The Romans used to gild sweetmeats; and many articles of furniture and utensils which have come down to us are gilt. There are also specimens of gilt glass and metals. The gilding, which still remains on some ancient bronze monuments, is remarkable for its brilliancy. This is owing, in part, to the great accuracy of the finish, but in part to the thickness of the leaf, which was much greater than that of the leaf used by the moderns. Besides, we must consider, that, in the most common way of gilding brass with an amalgam of gold and quicksilver, the gold is reduced to a state of much greater subdivision than in the leaf—the only state in which the ancients employed it. The account of Pliny shows that they did not fix the leaf merely by the aid of fire, as is

now done in gilding metals, but that they first covered the substance with quicksilver, which was then evaporated by heat, in a manner somewhat similar to the modern practice of gilding with amalgam. The ancients carried the practice of gilding to a greater extent than the moderns; they gilded almost all their statues of bronze, wood or plaster, and frequently those of marble, the ceilings of rooms, and even marble columns, eatables and victims. The *bracteatores*, or *inauratores*, were in high esteem among them, and enjoyed an exemption from taxes. In architectural ornaments, gilding may please the eye, either from its appearance of richness, or merely from its agreeable color. The most remarkable examples of gilding, employed with taste and effect in architecture, are the ceiling of St. Peter's, and that of Santa Maria Maggiore. But artists often fall into the error of mistaking richness of appearance for beauty. The art of gilding, at the present day, is performed either upon metals, or upon wood, leather, parchment or paper; and there are three distinct methods in general practice; namely, *wash*, or *water gilding*, in which the gold is spread, whilst reduced to a fluid state, by solution in mercury; *leaf gilding*, either burnished or in oil, performed by cementing thin leaves of gold upon the work, either by size or by oil; *japanner's gilding*, in which gold dust or powder is used instead of leaves. Gilding on copper is performed with an amalgam of gold and mercury. The surface of the copper, being freed from oxide, is covered with the amalgam, and afterwards exposed to heat till the mercury is driven off, leaving a thin coat of gold. It is also performed by dipping a linen rag in a saturated solution of gold, and burning it to tinder. The black powder thus obtained is rubbed on the metal to be gilded, with a cork dipped in salt water, till the gilding appears. Iron or steel is gilded by applying gold leaf to the metal, after the surface has been well cleaned, and heated until it has acquired the blue color, which at a certain temperature it assumes. The surface is previously burnished, and the process is repeated when the gilding is required to be more durable. It is also performed by diluting the solution of gold in nitro-muriatic acid, with alcohol, and applying it to the clean surface. This last process has been improved by Mr. Stoddart. A saturated solution of gold in nitro-muriatic acid, being mixed with three times its weight of sulphuric ether, dissolves the muriate of gold, and the solution is separated from the acid beneath. To gild the steel, it is merely necessary to dip it, the surface being previously well polished and cleaned, in the ethereal solution, for an instant, and, on withdrawing it, to wash it instantly by agitation in water. By this method, steel instruments are very commonly gilt.

Gilead, the Mountains of, in ancient geography; part of the ridge which runs south from mount Lebanon, on the east of Palestine. They gave their name to the whole country which lies on the east of the sea of Galilee, and included the mountainous region, called, in the New Testament, *Trachonitis*.

Giles, St. (*St. Ægidius*); a native of Greece, who lived in the sixth century, and was descended from an illustrious family. He gave all his property to the poor, and went to France, where he worked miracles, and founded a convent. He is still revered in that country. A relic of this saint was carried to Scotland, and bequeathed, under James II, to the church of Edinburgh: hence he became the patron of that city.—*St. Giles* is the name of a parish in London, so called from the church of St. Giles. It is the resort of poverty and wretchedness, and a greater contrast can hardly be found than that formed by the west end of the metropolis, the richest spot in the world, and St. Giles, one of the most wretched. There is another church of St. Giles, called *St. Giles Cripplegate*, which contains the tomb of Milton, whose monument was erected by the sculptor Bacon, at the expense of the late lord Whitbread.

Gilolo; one of the Molucca islands, in the East Indian ocean, about 70 leagues long, and 200 in circuit, but little known. It is said that the air is very hot and unwholesome, and that the country is very fertile in rice and sago. The inhabitants are represented to be well made, but savage and cruel, living without laws or fixed habitations. It neither bears cloves nor nutmegs. The equinoctial line runs through the southern part of it. Lon. 128° E.

Gilray. (See *Caricature*.)

Gimbals; the brass rings by which a sea compass is suspended in its box, so as to counteract the effect of the ship's motion, and keep the card horizontal.

Gimle. (See *Northern Mythology*.)

Gin. (See *Geneva*.)

Gin, Cotton. (See *Cotton*.)

Ginger (*amomum zingiber*) is an East Indian plant, belonging to the natural order

canneæ. The root is of the size of a finger, knotty, creeping, and produces three or four sterile stems, about two feet high, which are provided with lanceolate leaves, seven or eight inches in length, disposed alternately on two opposite sides of the stem, and nearly horizontal. The flowering stems are situated at some distance from these, and are covered with membranous scales, of which the superior ones are largest, and each envelopes a flower. It grows in moist places in various parts of tropical Asia and the East Indies, and has been cultivated to some extent in the West Indies, particularly in Jamaica. The root has an aromatic, pungent taste, and is much used by the inhabitants as a condiment, and sometimes, when green, and mixed with other herbs, as a salad. It is also candied, and makes an excellent preserve. It is used medicinally, as a carminative, and in debility of the stomach and alimentary canal. Ginger was known to the Romans during the time of the emperors, and is described in Pliny as being brought from Arabia.

Ginguené, Peter Louis, born at Rennes, in Brittany, in 1748, was descended from an ancient but impoverished family. He early acquired the ancient and living languages with great facility, and discovered much taste for painting, poetry and music. At Paris, he was obliged to divide his time between labors in one of the *Bureaux du Contrôle Général* and his studies. His punctuality and skill in the duties of his office, and free and elegant penmanship, acquired him the esteem of his employers; and an anonymous poem, *Confession de Zulme*, inserted in the *Almanach des Muses*, gained him reputation. He studied the foundations of the French language in the old grammarians and poets, especially in Rabelais and Malherbe. Both writers were his favorites, especially the last. In the contests between the partisans of Gluck (q. v.) and Piccini (q. v.), he took the side of Piccini and the Italian music, the more zealously, as he was Piccini's particular friend. In his notice, however, of The Life and Works of Nicholas Piccini (Paris, 1800), notwithstanding all his predilection for Piccini, he recognised Gluck as a man of taste and science. A poem upon the death of prince Leopold of Brunswick, and a eulogy upon Louis XII, were rewarded with prizes by the academy, and met every where with a favorable reception. His letters upon the confessions of Rousseau (*Lettres sur les Confessions de J. J. Rousseau*, Paris, 1791, translated into English, London, 1792) attracted much attention. By the rigid impartiality with which he examined his life, he did more for his defence, than would have been effected by the most labored panegyric. The revolution, in which he took an active part, as a friend of liberty, brought him into a wider circle of literary and official labor. Without neglecting his studies, to which belonged his contributions to the *Moniteur* and the *Mercure de France* (1790—2), his labors upon the *Dictionnaire de Musique*, in company with Framery (Paris, 1791 and 1815, 4to.), as a part of the *Encyclopédie Méthodique*, and his contributions to a *Nouvelle Grammaire raisonnée*, he associated himself with the more moderate and judicious writers upon the affairs of the times, by his share in the *Feuille Villageoise* (1791 and 2, in company with Grouvellé, and, in 1793—5, alone), and also by commencing and editing, from 1794 to 1807, the *Decade Philosophique Littéraire et Politique*, 54 vols. (called *Revue* after 1805). The *Decade* neither sounded the trumpet for Robespierre in the commencement, nor for Bonaparte afterwards, and was one of the few journals kept up through the whole revolution without loss of reputation. He was not less industrious in the duties of his office as director-general of the public schools, and, after resigning this office in February, 1798, as ambassador to the court of Turin. On his return, he became a member of the tribunate. But as he esteemed it his duty to oppose some of the regulations of the government, he was one of the tribunes rejected by the senate in 1802. He then commenced the valuable work, to which he is chiefly indebted for his fame—his *Histoire Littéraire d'Italie*, of which volumes, 1—6 were published at Paris, 1811—13, and volumes 7—9 after his death, in 1819. Tiraboschi, in his inquiries, had in view, rather the particulars than the general subject; Ginguené, on the other hand, endeavored to illustrate the general course and history of Italian literature, from the time of Constantine to the 18th century. He draws from the sources, and writes, generally, without prejudice. There is nothing splendid, either in the thoughts or style; but we are captivated by the unpretending, strong sense which prevails in the whole work, by his striking characters of individuals, and by his noble language, notwithstanding a certain monotony. Besides his labors as a member of the institute, the sessions of which he regularly attended, he wrote many Fables, chiefly after Italian

models (Paris, 1810—14), translated Catullus' Marriage of Thetis and Peleus into French verse (Paris, 1812), and contributed a good deal to the *Biographie Universelle*, and to the 13th and 14th volumes of the *Histoire Littéraire de la France*. A fortunate independence, happy domestic relations, and the respect of the best of his countrymen, shed happiness upon the evening of his life. He died at Paris, Nov. 16, 1816. Besides producing the writings above mentioned, and some small pamphlets, he edited the works of Chamfort (Paris, 1795, 4 vols.) and of Lebrun (Paris, 1811, 4 vols.), and prepared the text of numbers 14—25 of the *Tableaux de la Révolution Française*. The catalogue of his library is important, on account of his great collection of Italian books. This collection was purchased entire for the British museum in London.

Ginseng. The root of this plant has been celebrated for a long time among the Chinese, entering into the composition of almost every medicine used by the higher classes; and, indeed, so highly is it prized as to have received the appellations of "pure spirit of the earth" and "plant that gives immortality." Volumes have been written on its virtues, and recourse is had to it in every difficulty. The plant, which is the *panax quinquefolium* of botanists, is herbaceous, about a foot high, upright, and very simple, furnished above with three petiolate leaves, disposed verticillately: these leaves are composed of five unequal leaflets, which are oval lanceolate, acute and dentate on the margin: from the centre of the three leaves arises a peduncle, terminated by a small umbel of greenish inconspicuous flowers, which are succeeded by rounded and slightly compressed scarlet berries. It is said to be a native of Tartary, growing wild in a mountainous and wooded region between lat. 39° and 47°, where it is collected with many precautions by the Chinese and Tartars, at the commencement of spring and in the latter part of autumn, and is so rare as to bring three times its weight in silver. An early traveller relates that the emperor of China employed, in one year, 10,000 Tartars in procuring this root. From China it is imported into Japan, where it was obtained by the Dutch, who first brought it to Europe. Notwithstanding the extravagant price and high reputation of ginseng in China, it appears to be, really, a plant of very little efficacy; the taste is sweet and mucilaginous, accompanied with some bitterness, and also slightly aromatic. The same plant, at least it is so considered by botanists, inhabits the U. States, chiefly upon or in the vicinity of the Alleghany mountains, and has been exported to China, in such quantities as to reduce the price very much. The *P. trifolium*, another species of ginseng, inhabits Canada and the north-eastern parts of the U. States, and is distinguished from the former by its smaller stature and ternate leaves.

Gioja, Flavio, by some called also *Gira* and *Giri*, a navigator of Pasitano, a village in the vicinity of Amalfi, lived at the end of the 13th and the beginning of the 14th centuries. He was long considered as having first applied the loadstone to the purposes of navigation, and therefore as the inventor of the compass. Later inquiries upon this subject have proved that European navigators of the 12th century made use of the compass or magnetic needle. The merit, therefore, of the navigator of Amalfi can only be that of having perfected what was already invented, which, however, is enough to entitle him to the gratitude of posterity. Till his time, the needle was laid upon a couple of pieces of straw, or small split sticks, in a vessel of water, and thus pointed out the parts of the heavens; but this instrument must evidently have been unserviceable, except when the sea was still, and the vessel without much motion. Gioja introduced the improvement of suspending the needle in such a manner, that it will point north under all circumstances; and the importance of this fact may be inferred from this, that the whole nautical science assumed, from this moment, a new form, and the vessels, which before rarely left sight of the coast, now launched out upon the wide ocean. Thus Gioja may be considered the father of modern navigation; and posterity is indebted to him for the advantages it derives from it. His discovery has subsequently been much improved. (See *Compass*, and *Magnetic Needle*.)

Giordano, Luke, a painter, born at Naples, 1632, a scholar of Spagnoletto, went to Rome to study the great Italian masters, and became the pupil of Peter of Cortona, whom he assisted in his great works. Paul Veronese had afterwards a great influence on his manner. He imitated the greatest masters so well that even connoisseurs were imposed upon. He acquired the name of *Luca fa presto*, on account of the incredible celerity of his execution, or, more probably, because his father, from avarice, often urged him, by this phrase, to expedition. He was rich in invention; his coloring was soft

and harmonious, his pencil free and rapid, and he was well grounded in perspective. He was much employed at Naples, after his return. In 1679, he was employed, by Charles II, to ornament the Escurial. He was of an ardent temperament, and amused the court with his sallies. The queen once expressed a wish to see his wife. The painter executed a portrait of her on the spot, and showed it to the queen, who was so delighted with it, that she took off her pearl necklace, and sent it to the wife. The king once showed him a piece by Bassano, and expressed much regret at not possessing the pendant. A few days after, Giordano showed him a picture, which the king took to be by Bassano, and for a long time continued to do so, till our painter made himself known as the artist. Besides this picture, he also executed two other pieces, in imitation of the style of that painter, which are in the Carthusian convent at Naples. There is also in the same convent, a piece in which he imitated the manner of the chevalier Maximo Stanzioni. After the death of Charles II, he returned to his native country, where he died, 1704. His most celebrated pieces are his frescos, in the Escurial, at Madrid, Florence and Rome. Some of his finest paintings are in the gallery at Dresden. His works are too numerous to have allowed him time for careful study: few are therefore without faults.

Giorgione di Castelfranco, properly Giorgio Barbarelli, born, in 1477, at Castelfranco, in the Venetian territory, is one of the most celebrated painters of the Venetian school. His master was Giovanni Bellini, who dismissed him from envy of his merits. In Venice, he ornamented the façades of several large buildings, as was the fashion at that period, with frescos, which have mostly perished. He found in Titian a formidable rival in this branch of his art. His portraits are reckoned among the finest of the Italian school. In order to decide practically the dispute concerning the superior of the two imitative arts, he painted, according to Vasari's account, a naked figure, of which the back was to the spectator, and the front represented as seen in a clear fountain. Upon a polished cuirass, which lay on one side, was the left profile, while the right was reflected from a mirror upon the opposite side, that he might show, in this way, that painting deserves the preference to sculpture, since it can exhibit more parts of the body in a single view. His pieces are rare. At Milan, and in the galleries at Vienna and Dresden, some are to be seen; and the ducal palace at Brunswick and the gallery at Pomersfelden have each one of his pictures. He died in 1511. His school is distinguished by truth of coloring.

Giotto. This celebrated painter, and friend of Petrarch, was named *Ambrogiotto Burdone.* Being the son of a peasant in the Florentine village of Vespignano (born, according to Vasari, in 1276, according to Baldinucci, in 1265), he was employed in tending cattle. But having been once seen by Cimabue, as he was drawing figures of his sheep upon a piece of slate with a stone, that artist obtained leave from his father to take him with him, carried him to Florence, and taught him painting. His natural talent, and especially the gracefulness so peculiar to him, developed themselves so rapidly, that he became a master in a short time, and soon surpassed all contemporary artists. He represented human figures in his pieces with truth and nature, and surpassed all others in the dignity of his figures, a pleasing arrangement of them, and a regard to correct proportions and natural disposition of the drapery. His figures have more life and freedom than those of his predecessor, Cimabue, as he particularly avoided the stiff style. Among his most celebrated pieces is the Navicella (ship), at Rome (a picture of Peter walking upon the waves, in Mosaic), some fresco paintings at Florence (the crowning of the holy virgin, in the church of Santa Croce, and the burial of the virgin, so much admired by Michael Angelo and Mengs), also the history of St. Francis, at Assisi, and several miniatures. This extraordinary man was equally successful as a statuary and architect. He died in 1336, and left numerous scholars.

Gipsy. (See *Gypsy.*)

Giraffe. (See *Camelopard.*)

Girardon, Francis, statuary and architect, was born, 1628, at Troyes, in Champagne, and was a pupil of Laurence Mazière. After he had completed his studies with Francis Anguier, he acquired such celebrity, that Louis XIV sent him to Rome, with a pension, to study the ancient and modern masters in the art. After his return, he ornamented the royal palaces with his works, both in marble and bronze. On Lebrun's death, he obtained the office of overseer of all the works in statuary. His works are remarkable for purity of design and beauty of arrangement. The most noted are the following: the splendid monument of

cardinal Richelieu, formerly in the church of the Sorbonne, afterwards in the museum of the Petits Augustins; the equestrian statue of Louis XIV, which was his masterpiece, and which was thrown down and broken to pieces, Aug. 12, 1792; the Rape of Proserpine, in the garden of Versailles; and the masterly groups which ornament the Apollo baths, also at Versailles. As he was too constantly occupied to work much himself on his marbles, he left this portion of the labor to artists, who, although respectable, had not the talents of their master. He died at Paris, 1715. His wife, Catharine Duchemin, painted flowers.

Girodet, Trioson Nicholas, born in 1767, at Montargis, was the most original, versatile and scientific of the modern school of French painters, and was a scholar of Regnault. He studied, while quite young, at Rome. He obtained the great prize among the pupils of David, at 22 years of age. A decided inclination to the ancient style and the fulness of statuary, is very perceptible in his works; but they are also distinguished for life, nature and beauty. His drawing is correct, and of great precision; his coloring is rich, transparent and harmonious. He works with equal care and genius. He loves to produce effect by strong lights, but they are in unison with the spirit of the pieces. The Endymion, which he painted while in Italy, is one of his finest pieces. His Hippocrates (engraved by Massard), is a beautiful specimen of *chiaro-scuro*. His Deluge is celebrated, and shows a spark of the gigantic genius of Buonarotti. His Attala, from Chateaubriand, is charming. He painted Napoleon receiving the keys of Vienna. His portraits are full of truth and strength. He painted, in 1824, the full length portraits of the Vendean leaders, Bonchamp and Cathelineau, the first from a miniature, and the latter from the features of his son, who resembled him. His last great picture represents Saint Louis in Egypt. He died at Paris, Dec. 9, 1824.

Gironde; a river in France, formed by the union of the Garonne and Dordogne, 12 miles below Bordeaux. It runs into the Atlantic, after a course of about 27 miles N. N. W. It gives its name to a department (see *Departments*), which has acquired celebrity from the *Girondists*. (q.v.)

Girondists (*les Girondins*), a republican party of an elevated character in the second French (legislative) assembly (1791—3), were distinguished for the abilities and eloquence of their most eminent speakers, and for their six months' fatal contest with the Mountain party in the national convention. They were called *Girondists*, because their leaders, Guadet, Gensonné, Vergniaud, with whom were connected about 20 others (and among them the talented Ducos), were from the department of the Gironde. At their head stood the intrepid, fiery Guadet, one of the most distinguished orators in the convention. He was an advocate at Bordeaux, when, at the age of 32, he was elected a member of the legislative assembly, at the time (1791) when the king was detained as a prisoner in his palace, after his return from Varennes, when republican notions were adopted by the ablest men, and public opinion required the substitution of a republican form of government for the monarchy. The deputies of the department of the Gironde, before setting out for Paris, swore, in their clubs at Bordeaux, to eradicate the last remains of monarchy, and found a republic in its place. On this account, Guadet and his associates did not join the club of the *Feuillants*, by which the constitutional monarchy was defended, but that of the Jacobins, among whom the most violent demagogues (the Cordeliers), Danton, Robespierre, Brissot, Pétion, Siéyes and others, had inspired the minds of the people with such a hatred of the king, as to lead to the utter subversion of the throne. Guadet's stormy eloquence produced a most powerful impression. His chief attacks were upon the emigrants, the priests, the court and the ministers. In this spirit the decree against the king's brothers was proposed by him and Gensonné, Jan. 2, 1792. But there were other Girondists, who were more moderate, and not declared enemies of the king. From among these Louis chose his ministers, Roland, Servan, Clavière and Dumouriez; but the others advanced with impetuosity in the path of the revolution, and the attack upon the Tuileries, June 22, 1792, was generally regarded as their work. Learning prudence from the violent democracy of the party of which Danton was the leader, they began, towards the end of July, 1792, to make advances to the constitutionalists, and even to treat with the court. Their advances were rejected, and they returned to their old system, but still had no part in the horrors of the 10th August, which were wholly the work of Danton and his party. They thought the moment for founding a republic was not yet arrived, and even proposed to appoint a governor for the dauphin. After the

10th August, Guadet, and other Girondists, were the most effective members of the executive committee, in which they not only avoided any act of violence, but protected the proscribed. But they were soon compelled to yield to Danton's party, which had the Paris mob upon their side, and to suffer the massacre of the prisoners, upon the 2d September, to take place under their eyes. Their republican spirit awaked anew, when the army of the allies entered France, and Guadet proposed that the town of Longwy should be levelled with the ground, because it had suffered the enemy to enter it. He opposed, with great force, the Orleans faction, and demanded the punishment of the crimes of September 2. But the Girondists, who had just drawn up a new constitution (the work of the celebrated Condorcet), could not, from their known principles, depend for assistance upon either the constitutionalists or royalists, and the Jacobins reproached them with their former connexion with the court. Guadet was exposed to the most violent attacks from the Jacobins and the Cordeliers (the followers of Marat), because he was the principal object of their dread. This was particularly the case with Robespierre. But the orator of the Garonne alone, and by the force of his talents, overthrew the popular favorite, so that even his enemies were constrained to admire him. Guadet displayed himself most signally, when he accused Danton and Robespierre of being the supporters of a far more dangerous party than that of the Gironde. To refute the calumnies of their enemies, they also proposed that sentence of death should be decreed against any who should propose the recall of the Bourbons to the throne, and against the emigrants; they also moved the decree for the imprisonment of the duke of Orleans. At the king's trial, Guadet, Gensonné and Vergniaud voted for his death, after their proposal in favor of an appeal to the nation had been rejected. (Vergniaud's extemporaneous Appeal to the People is one of the most eloquent orations in the French language.) After the sentence of death was pronounced, Guadet made great efforts to delay the execution, and procured the fourth vote in that unfortunate trial. But their enemies were too powerful for them. They declined still more after they had the imprudence to propose a decree against Marat, on the 20th April. He was acquitted by the revolutionary tribunal, and the Mountain thought that they might now venture to bring the leaders of the Girondists to the bar of the tribunal. The Jacobins, however, seeing that they should be unable to deprive the Girondists of their majority in the assembly, employed the sections of Paris, which made their appearance before the convention, and with tumultuous cries demanded the condemnation of the Girondists; but Guadet was triumphant, both on this occasion and subsequently, when the whole commune of Paris repeated the demand. The mob of the suburb St. Antoine and others were now induced to take arms, and the tocsin was sounded on the 31st of May, 1793. An armed mob surrounded the convention, while Hassenfratz, accompanied by a troop of pretended petitioners, and supported by their murderous cries, demanded the outlawry of 22 Girondists. At this decisive moment, Guadet took possession of the tribune, and his party seemed once more to triumph; but the resistance lasted only to the 1st and 2d June; the Jacobins, supported by a lawless mob, gained the superiority, and 34 Girondists were put under sentence of outlawry, and summoned to appear before the revolutionary tribunal. The greater number of the accused endeavored to save themselves by flight to the western departments, where they hoped to raise the standard of rebellion against the assembly. This body, however, sustained by terror, which had become the great engine of government, advanced with steady steps to their object. The number of the proscribed was increased to 53; 66 others, who had protested against the proceedings of the 1st and 2d June, were expelled from the assembly, and even imprisoned. Executions rapidly succeeded each other. Gorsas first suffered under the guillotine (Oct. 7, 1793), and, on the 31st, Brissot, Gensonné, Vergniaud, Silléry, and 17 others. A few escaped, and among them Louvet, who published the occurrences relating to his proscription in a very interesting form, under the title of *Quelques Notices pour l'Histoire*, &c. Roland, Pétion, Condorcet and others, killed themselves. Guadet was executed at Bordeaux (July 17, 1794), at the age of 35 years, and soon afterwards his father, aunts and brother, as relations of a person proscribed. The Girondists were pure patriots, with the image of ancient republicanism and heroism before their eyes, as their speeches and measures show: they were animated by an elevated love of liberty, but their doctrine did not answer the urgent demands of so violent a period, when France, torn by civil discord, was threat-

ened by powerful enemies from without. The struggle of the Girondists with the Mountain, is one of the most interesting events in the French revolution. (See Mignet's *Révolution Française.*)

Girouette (*French*, weathercock). In recent times, when political systems have succeeded each other in France with startling rapidity, many individuals of distinction have been found, of course, to turn with every political breeze, and a *Dictionnaire des Girouettes* has been published, containing the names of numerous public characters, with a number of weathercocks against each name, corresponding to the number of changes in the individual's political creed. The Nestor of the *girouettes* is probably Talléyrand (q. v.), over whose name it would be sufficient to draw a few weathercocks and several points, as the mathematicians designate *ad infinitum.*

Giulio Romano (properly *Giulio Pipi*); the most distinguished of Raphael's scholars and assistants. He was born at Rome, in 1499. During the lifetime of Raphael, he painted with him and under his direction, and his inclination for the terrible and violent was kept within proper limits; but after Raphael's death, he followed his inclination more freely. After having finished the great hall of Constantine at Rome, under Clement VII, he went to Mantua, not, as is generally supposed, to avoid the anger of the pope, on account of some indecent pictures sketched by him, and engraved by Raimondi (as these appeared later), but at the request of count Castiglione. He here found a wide field for the exercise of his powerful genius, both in architecture and in painting. The palace of the T was ornamented entirely by him, or by his scholars under his direction. The school which he here opened, made the principles of Raphael known in Lombardy. After the death of San Gallo, in 1546, the building of St. Peter's was committed to him; but he died the same year. While he only aspired to follow his master, he showed himself judicious, graceful and pleasing; but when he afterwards gave himself up to his own imagination, he astonished all by the boldness of his style, by the grandeur of his designs, by the fire of his composition, by the loftiness of his poetical ideas, and his power of expression. We admire all these qualities united in the fall of the Titans, in the palace of the T, and in the History of Constantine (at Rome). He is accused of leaving the study of nature for that of the antique style, of not understanding drapery, of a uniformity in his heads, and of a hardness in his coloring. On the other hand, no master has displayed more talent and science in his paintings. His most distinguished scholars were Raphael dal Colle, Primaticcio and Giovanni Battista Mantovano.

Giunti. This celebrated family of printers, called also *Juntæ*, *Junta*, *Juncta*, *Giunta* and *Zonta*, originated not from Lyons, as has sometimes been supposed, but from Florence, where they appear as early as 1354. The branch of the family which still remains there, was elevated to the patrician rank by a decree of 1789. They were eminent as booksellers and printers, in the latter part of the 15th century; and their presses at Venice, Florence, Lyons, and later at Burgos, Salamanca and Madrid, contributed, by the valuable works which issued from them, to the promotion of European civilization. The oldest of these presses appears to be that at Venice, established by Luke Antonio Giunti, who removed from Florence to Venice in 1480. At first, from 1482 to 1498, he only sold books, and had his printing done by other hands (*Catharina di Sienna Dialogo de la Divina Providentia*, Venice, Mthi. da Codeca, 1482, 4to.). But, in 1499, he set up a press of his own, the first product of which was *J. Mar. Politiani Constitut. Ord. Carmelitarum*, 4to. His last impressions are dated 1537, the year of his death. The establishment was continued, after his death, under the name Hæredes L. A. de Giunta, then under the direction of his son Thomas, whose printing-office was burnt in 1557. It was rebuilt, and continued under various masters till some time in the next century. In 1644, the heirs of Thomas Giunta appear, as partners in the house of Fr. Baba, and this connexion was still existing in 1648. The last publication known to be from the Venetian press, is in 1657 (*Hi. Ochi Lib. III, de Febribus*, Ven. apud Juntas, 1657). Their editions are not at all distinguished from the common Venetian editions of the time, and rank far below the best of Manucci, Giolito and others. The Giuntine editions are neither distinguished for paper nor type, and seem not to have been intended to promote the cause of literature, but merely for pecuniary profit. The Venetian Giunti appear not to have published any editions in parchment. They also published but few Greek works. The edition of Cicero by Victorius, in 1534, is almost their only remarkable publication. Their missals are not without value. Philip Giunti, whose branch of

the family was afterwards so celebrated, and who was son of one of the same name, and nephew of Luke Antonio, established himself in his native city of Florence. He probably enjoyed the instruction of Christopher Landino. He had a printing-office in Florence, and the first publication which issued from it was *Zenobius*, in 1497. After the death of Philip (1517), the establishment was continued by his heirs. The last work published at the Florentine office, seems to have been Buonarotti's *Rime* (1623). The types of this office need not fear comparison with those of Manucci; but are rather inferior in variety. Their Italics might perhaps be preferred. But the paper, the ink, and the whole appearance of the editions of Aldus are better. The Florentine office also published some large paper editions, and some good editions in parchment. They probably possessed a type foundery, by which other contemporary printers in Florence were supplied. The Giuntine editions have not yet been thought worthy of being the subject of particular collections, although they appear to deserve it as much as the Aldine (q. v); and it has been quite too hastily concluded, that their editions were only republications of the Aldine texts. The intrinsic value of their editions is greater than is generally allowed. An accurate examination of the Italian authors, printed at this office, shows what great advantages the Giunti derived from the scholars, whom they, as well as the Manucci, knew how to collect around them. This commendation is less applicable, however, to the office at Lyons, founded by Jacob de Giunta, from Florence, son of Francis, who appears to have been at Venice in 1519, but is found in 1520 at Lyons, where he was first a publisher, and, after 1527, a printer. After his death, in 1548, the concern was continued by his heirs, of whom we find traces in 1592. The relations which subsisted between the Italian and Spanish offices, as also among these last, are not so easily explained. Juan Junta printed at Burgos, in 1526, 28 and 51; Philip, perhaps the same person with the Florentine Philip the younger, from 1582 to 93. Juan Junta is found as a printer at Salamanca, 1534—52, who, from all appearances, must have been the Juan Junta of Burgos, and, in 1582, Luke appears there also. We find Giulio Giunta at Madrid, in 1595, who died in January, 1618; and Thomas Junta or Junti, from 1594 to 1624, who appears to have been the royal printer in 1621. An index of the Giuntine editions, to 1550, may be found in Ebert's Biblical Lexicon.

Giustiniani Collection; a beautiful collection of paintings, which the king of Prussia bought, in 1815, at Paris. It is now, with a selection of the most beautiful pictures from the different royal palaces, in the magnificent museum, lately built by Mr. Schinkel. These pictures were collected by a marquis Giustiniani, living at Rome towards the end of the 16th century. In 1807, the collection was carried to Paris, where the prince Giustiniani sold it to M. Bonnemaison. There are now 170 pictures belonging to it.

Given is a term frequently used by mathematicians, to denote something supposed to be known. Thus, if a magnitude be known, it is said to be a *given* magnitude. If the position of a thing be known, it is *given* in position; if a circle be described with a known radius, its centre is *given* in position, and its circumference *given* in magnitude, and the circle itself is said to be *given* both in magnitude and position. If the kind or species of a figure be known, it is said to be *given* in species; if the ratio between two quantities be known, these quantities are said to have a *given* ratio, &c. &c.

Givet. (See *Charlemont.*)

Gizeh; a city of Egypt, on the left bank of the Nile, 3 miles above Cairo; population, 8 or 10,000. The walls are of great extent, with only one gate to the country; they are 10 feet high and three thick; the palace is in the south quarter, near the Nile. Here is a cannon foundery. The houses are built of brick and clay; and the town has no other ornament than four or five mosques, with minarets, and some palm trees. A great number of earthen pots are made here, and tiles, coarse and without varnish, of which the Egyptians do not well know the use. Gizeh is chiefly distinguished for the pyramids situated in its neighborhood, two of which, those of Cheops and Cephrenes, are the most remarkable in Egypt. According to some authors, the city of Memphis was situated here.

Gizzard. (See *Stomach.*)

Glaciers. The summits and sides of mountains, above the limit of perpetual snow (see *Snow*), are covered with a crust, which is harder than common snow, yet not like common ice. More ice is formed on the sides of mountains than on their summits; but this does not constitute the *glaciers*, properly so called. The glaciers are vast fields of ice, extending from the declivities of the mountains down into

the valleys, below the snow-line. They are often horizontal, generally, however, a little inclined. The ice of the glaciers is entirely different from that of the sea and river water. It is not formed in layers, but consists of little grains of congealed snow; and hence, though perfectly clear and often smooth on the surface, it is not transparent. Its fracture is not radiated, like that of sea-ice, but granular. In the numerous fissures, however, the ice near the surface has a greenish, near the bottom, a blue cast. Along the edges of the glaciers, are the *môraines*, as they are called in Savoy (in Iceland, *jökelsgiärde*). They consist of an accumulation of earth, which is often several fathoms high, and, in summer, present the appearance of bottomless morasses, producing no vegetation. It is probable that these *moraines* are produced by the melting of the lower part of the glacier, which always takes place in summer, without which the annual accumulation of snow, in winter, would form an endless crust. The great ice-fields are also continually extending further down into the valleys, where, in summer, they are at last partially melted by the warmer temperature. In Lapland, where the sun has less power, glaciers slide down in the region of the Sulitelma, which render the air so cool, that the line of perpetual snow extends as low as 3000 feet above the level of the sea. The descent of the glaciers, which is assisted, in summer, by the avalanches, is greater or less, according to the inclination of the glacier. This is shown by the changes in the position of large masses of rock around the glaciers. They are evidently pushed along by the ice, and, near the Grindelberg, in Switzerland, it has been found, by examination, that stones have been pushed forward 25 feet in one year. Stones of considerable bulk are also seen in the *moraines* of an entirely different formation from those of the valley, and must therefore have been pushed down from the higher regions in the course of time. As glaciers, in some positions, and in hot summers, decrease, they often also increase for a number of years, so as to render a valley uninhabitable. Their increase is caused partly by alternate thawing and freezing; their decrease, by the mountain rivers, which often flow under them, and thus form an arch of ice over the torrent. Streams are seen at the bottom of the deepest fissures, which, in the Helvetic Alps, are called *dust* or *powder avalanches*, because they consist of newly fallen snow, which is carried by the wind into the depths. There are also, particularly in the Norwegian Alps, *dirt avalanches*, so called, which carry along stones and earth with them, and increase the *moraines* of the glaciers. In the Tyrol, Switzerland, Piedmont and Savoy, the glaciers are so numerous that they have been calculated to form altogether a superficial extent of 1484 square miles. There are some glaciers, in Savoy, more than 14 miles long, 2¼ miles wide, and from 60 to 600 feet thick. One of the most famous glaciers is the *mere de glace* (sea of ice) in the valley of Chamouni, about 5700 feet above the level of the sea. In France, near Beaume, and in the Carpathian mountains, near Dselitz, are subterraneous glaciers, which never melt, because the sun cannot act upon them. From this account, it is evident that there can be no glaciers in the Andes, because the temperature continues the same the whole year between the tropics. The noise which is produced by the opening of fissures in the glaciers is immense, and resembles thunder among the mountains. These fissures are often immediately covered with snow, and are therefore very dangerous to travellers. (See *Avalanches*.)

Glacis, in fortification, is the sloping covering of the outer breastwork along the covered way, which descends to the level ground, and covers the ditch upon the outside. It must be so placed, that the guns of the fort will rake it at every point.

Gladiators were combatants, who fought at the public games, in Rome, for the entertainment of the spectators. They were at first prisoners, slaves or condemned criminals; but afterwards freemen fought in the arena, either for hire, or from choice. The regular gladiators were instructed in schools intended for this purpose. The overseer of this school purchased the gladiators, and maintained them. They were hired of him by those who wished to exhibit games to the people. The games were commenced by a *prælusio*, in which they fought with weapons of wood, till, upon a signal, they assumed their arms, and began in earnest to fight in pairs. In case the vanquished was not killed in the combat, his fate was decided by the people. If they decreed his death, the thumb was held up in the air: the opposite motion was the signal to save him. In general, they suffered death with wonderful firmness, and the vanquished often exposed himself to the death-blow. If he wished to appeal to the people, he raised his hand. When

a gladiator was killed, attendants, appointed for the purpose, dragged the body, with iron hooks, into a room destined for this purpose. The victor received a branch of palm or a palm garland. The gladiators were often released from further service, and received, as the badge of freedom, a wooden sword (*rudis*).

Gladiatorial Statues. The most celebrated gladiatorial statues are—1. the gladiator Borghese, which Winckelmann considered to be the statue of a warrior, or of a caster of the discus. Lessing thought it the statue of Chabrias; Nibby supposed it to be the statue of a Gaul, from the acroterium of the temple of Apollo at Delphi, which had been placed there in commemoration of the defeat of the Gauls before the city. It is a combatant, with extended arm, in the act of warding off a blow. It is a statue of the first rank, made of fine grained marble, and is now in the capitol, to which it was restored from Paris, 1815. 2. The dying gladiator, purchased from the Ludovisian collection for the Museum Capitolinum. It is a dying warrior, according to Zoega, a barbarian, who has received a wound in his breast, and is in the act of falling, with an expression of rage. The mustachios and the rope on the neck are perhaps the work of a modern artist, Michael Angelo.

Glair Eggs is the same as the white of eggs, used as a varnish for preserving paintings. For this purpose, it is beat to an unctuous consistence, and commonly mixed with a little brandy or spirits of wine, to make it work more freely, and with a little lump sugar, to give it body, and prevent its cracking, and then spread over the picture with a fine, elastic brush.

Glamour, or Glamer; an old term of popular superstition, in Scotland, denoting a kind of magical mist believed to be raised by sorcerers.

Glanvil, or Glanville, Ranulph de; an English baron of the 12th century, celebrated as a lawyer and a warrior. He was of Norman descent; and, in the reign of Henry II, held the office of justiciary of the kingdom. It was at that period that he signalized his valor in repelling the invasion of England by William, king of Scotland, who was taken prisoner as he was besieging the castle of Alnwick. Richard I, after his accession to the crown, is said to have imprisoned Glanvil, and obliged him to pay for his freedom the sum of £15,000 towards the expenses of a crusade to the Holy Land. The aged magistrate accompanied his master on the expedition to which he had so largely contributed, and perished, together with a vast multitude of other English warriors, at the siege of Acre, in 1190. To judge Glanvil is attributed a curious treatise on the laws and customs of England, which was first published in 1554. A translation, by John Beames, of Lincoln's Inn, appeared in 1812, with a life of the author.

Glarus, one of the smallest cantons of the Swiss confederacy, the seventh in rank, surrounded by the cantons of St. Gall, the Grisons, Uri and Schweitz, contains 445 square miles, with 24,000 inhabitants, of whom 4000 are Catholics, the others Calvinists. On all sides, except towards the north, Glarus is walled in by glaciers and mountains covered with snow. The river Linth flows through it. In 1352, it joined the Swiss confederacy. The inhabitants are distinguished for their industry. The constitution is a pure democracy. The capital,

Glarus, situated on the Linth, has 4000 inhabitants. It lies at the foot of the Glärnisch, a mountain 9500 feet high. It contains a Catholic church, several schools, considerable manufactories, &c. The green cheese, called *Schabzieher*, is made here. Four miles below Glarus, on the Linth, is Näfels, where the inhabitants twice defeated (1352 and 1388) superior numbers of Austrians.

Glasgow; a city of Scotland, in the county of Lanark, which has been long distinguished for its extensive commerce and manufactures. It is one of the most ancient towns in Scotland, its origin being generally attributed to St. Mungo, or St. Kentigern, who is said to have founded a bishopric here in the year 560, which was afterwards erected into an archiepiscopal see in 1484. The principal part of the city occupies a plain on the north side of the river Clyde. Its length and breadth are ascertained by two main streets which cross each other at right angles, and run, the one east and west, about one mile and a half, and the other, north and south, three fourths of a mile long. Of the public buildings in Glasgow, the cathedral, or high church, at the north end of the High street, is a splendid edifice, and perhaps the most entire specimen of Gothic architecture that is to be found in Scotland. It is 284 feet long, 65 broad, and 90 feet high within the walls, with two large towers, on one of which a spire was built about the year 1420, making the whole 220 feet in height. Of the other churches, the most remarkable are St.

David's, St. Enoch's and St. Andrew's. A Roman Catholic chapel was erected in 1816. There are altogether within the city 10 parish churches, besides the barony; 7 chapels connected with the establishment, besides 25 meeting houses for different classes of dissenters. The Glassites, Bereans, Universalists, &c., have all places of worship. The college buildings, and the houses for the accommodation of the professors, are very extensive, having a front of 305 feet to the High street, and 282 feet from east to west. This celebrated seminary of education was founded in 1450, by William Turnbull, bishop of Glasgow. About 1400 students attend the university. There is a valuable and extensive library. The celebrated doctor William Hunter, of London, bequeathed to the university his whole museum, one of the most valuable collections in Europe, of natural history, paintings, medals, anatomical preparations, books, &c. At present, the establishment in the university consists of a lord chancellor, lord rector, dean of faculty, the principal and professors of divinity, church history, Oriental languages, natural philosophy, mathematics, moral philosophy, logic, Greek, humanity, civil law, *materia medica*, anatomy, practical astronomy, and the *regius* professors of natural history, surgery, midwifery, chemistry and botany. There is also another institution, where lectures are given on natural and experimental philosophy, on mathematics, on chemistry, botany and natural history. There are numerous charitable institutions, various hospitals for the sick and infirm, a lunatic asylum, a Magdalen asylum, besides charity schools. The suburbs, both to the north and south, on the opposite shore of the Clyde, are connected with the body of the city by three handsome bridges. The Clyde is navigable for vessels drawing seven or eight feet water, as far as the lowest bridge; and a quay, extending a quarter of a mile down the river, affords every accommodation for trade. The manufacture of linens, lawns, cambrics, and other articles of similar fabric, was introduced into Glasgow about the year 1725, when it was superseded, in 1787, by the introduction of muslins. In 1785, the dyeing of cottons in turkey red color was begun; and a manufactory of Bandana handkerchiefs has been since established. Previous to the union, the trade of Glasgow was chiefly confined to Holland and France. After this, however, the English colonies being opened to the Scotch, Glasgow engaged extensively in the trade of Virginia and Maryland, importing chiefly tobacco. The West India trade afforded another outlet to the increasing capital of Glasgow, and this branch of commerce has been since greatly extended. Glasgow is celebrated for its great establishments for the cotton manufacture. There are 54 works for weaving by power, which contain 3700 looms, producing 1,924,000 pieces, containing 48,000,000 yards, annually; and it appears, from a late investigation, that there are about 32,000 hand looms. There are 12 calender houses, which have 32 calenders moved by steam. These calender daily 296,000 yards of cloth, besides dressing 530,000, and glazing 30,000 yards. There are 38 calico printing works, 16 brass founderies, and 310 steam engines, connected with the city. About the year 1172, Glasgow was erected into a burgh by William (surnamed the *Lion*), king of Scotland. In 1611, James VI granted the city a very ample charter, by which it was erected into a royal burgh. The communication of Glasgow with the country along the shores of the Clyde, has been greatly aided by the use of steam-boats, of which there are now 46 plying on the Clyde. It communicates also with the surrounding country by various canals. The suburbs are extensive, and contain several populous and industrious villages, which carry on extensive manufactures. There are also several printfields and extensive bleachfields in the vicinity of the place. Population, in 1780, 42,832; in 1791, 66,578; in 1801, 83,769; in 1811, 110,460; in 1821, 147,043. Lon. 4° 15′ 51″ W.; lat. 55° 52′ 10″ N.

Glass doubtless owes its origin to chance. Pliny informs us that Sidon was the first city distinguished for its glass-works, and that the manufacture of glass was not introduced into Rome until the reign of Tiberius. He further states, that, in the reign of Nero, the art of making vases and cups of a white, transparent glass, was invented. De Pauw is of opinion that the Egyptians carried the art to the highest perfection; and that the glass-works at Diospolis, capital of the Thebaïd, were the first regular manufactory of this material. The Egyptians, according to the same author, performed the most difficult operations in glass-cutting, and manufactured cups of glass of an astonishing purity, of which kind were those called *alassontes*, supposed to be ornamented with figures in changeable colors. Winckelmann says that the ancients, in general, made much greater use of glass

than the moderns. Besides the ordinary utensils, of which a great quantity have been found in Herculaneum, we find many funeral urns constructed of it. Some of the fragments of cups examined by Winckelmann, appeared to have been cut; some of the raised ornaments having the appearance of being soldered to the surface of the vessels, and bearing marks of the lapidary's wheel on their *facettes*. The ancients also used glass to ornament their rooms; for this purpose, they employed it of various colors, and composed a sort of mosaic of it. Some blocks of glass, used for paving rooms, have been found, of the thickness of a common sized brick. Winckelmann cites some specimens of mosaic of remarkable beauty and delicacy. One of them represented a bird on a dark and colored ground. The colors of the bird were very brilliant and various, and the whole effect very soft. The artist had made use of opaque or transparent glass, according to the exigencies of the case. What was not the least remarkable was, that the reverse offered precisely the same figure, without the slightest difference in the details. A little glass ring, which was in the possession of Mr. Hamilton, revealed the method in which this was performed. The exterior of the ring was blue, and the interior represented a species of rose, of different colors, extending the whole circuit of the ring. As melted glass may be drawn out into an amazingly fine wire, this operation may be performed on pieces of glass, compounded of different colors and melted, the colors preserving the respective layers when wire-drawn. Caylus thinks this was the manner in which these works of art were made. The most valuable remains of the ancients, in glass, are the impressions and casts of sculptured gems, both in sunk and raised work, and the larger works in relief, of which one whole vase has come down to us. The glass casts of intaglios often imitate the veins of different colors in the original. These pastes have preserved the impressions of many beautiful gems, which are lost. Of the larger works in relief we have only some fragments: they served as ornaments to the walls of palaces. The most considerable work of this kind is the cameo described by Buonarotti, and preserved in the Vatican: it is an oblong tablet of glass, about 8 inches by 6, representing Bacchus and Ariadne, with two satyrs. But the most beautiful specimens of this art are the vases adorned with figures in relief: they were sometimes transparent, sometimes of different colors on a dark ground, and so delicately executed, that they were hardly to be distinguished from the vases of sardonyx. The Portland vase is the only one of this sort preserved entire. It was formerly called the *Barberini vase*, as it belonged to the Barberini palace at Rome. It is about a foot high, and was at first described as a sardonyx. (See *Portland Vase*.) The ancients were also acquainted with the art of painting on glass (*see a subsequent division of this article*).

Glass is made by melting silicious earth or sand, alkaline substances, and metallic oxide, at a white heat. The name is an old German word, and is connected with *gleissen* (to shine), and with the English word *glisten*, and even with *glacies* (ice) and *glanz* (splendor). The manufacture of glass is now brought to a high degree of perfection, especially in England. The English glass-houses are commonly large conical buildings, from 60 to 100 feet high, and from 50 to 80 feet in diameter. The furnace is in the middle, over a large vault, which is connected with it by means of an opening. This opening is covered with an iron grate, upon which the fire is made, and it is kept up by the draught of air from the vault. The most important part, however, of the apparatus of the glass-house, is the crucible. These instruments are made from a particular kind of clay, which is found at Stourbridge. This is first pounded fine, then sifted, moistened, and worked into a thick dough. Sometimes old crucibles are used, which are broken into powder, and then mixed with a red clay. Some pots, for bottle and flint glass, are made 40 inches deep and wide. They are from two to four inches in thickness. They remain several days at a white heat, before they are placed in the furnace. The basis of glass is *silica*. Much of the silicious sand used in the U. States comes from the banks of the Delaware. When flints or quartz are used, they are first reduced to powder by being heated red hot, and then plunged into cold water. This causes them to whiten and fall to pieces, after which they are ground and sifted. The second ingredient is an alkaline substance, potash or soda. The alkali used is more or less pure, according to the fineness of the glass to be made. Lime is often employed in small quantities; also borax. Of the metallic oxides added in different cases, the deutoxide of lead is the most common. It renders flint glass more fusible, heavy and tough, and more easy to be ground and cut, increases its brilliancy and

refractive power. A small quantity of black oxide of manganese renders the glass more transparent; too much gives a purple tinge, which, however, may be destroyed by a little charcoal or wood. Arsenious acid (white arsenic), in small quantities, promotes the clearness of glass; too much of it gives the glass a milky whiteness. Its use in drinking-vessels is not free from danger, if the glass contains so much alkali that any part is soluble in acids. The following are the processes employed in making glass:—

Fritting. The various materials are carefully washed, and, after the extraction of all the impurities, are conveyed to the furnace in pots made of tobacco-pipe clay. The produce of this process is called the *frit*, which is again melted in large pots or crucibles, till the whole mass becomes beautifully clear, and the dross rises to the top. *Blowing* is the next process, which, in round glass, as phials, drinking-glasses, &c., is thus performed: The workmen dip the end of long iron pipes, red hot, into the liquid glass, then roll it on a polished iron plate to give it an external even surface; they next blow down the iron pipe, till it enlarges the metal like a bladder, and, if necessary, roll it again on the iron plate, and proceed to form it into a globular form, or any other one required. The glass is then transferred from the blowing pipe, by dipping the end of another iron rod into the liquid glass, which adheres to the heated rod, and with which the workman sticks it to the bottom of the vessel; then, with a pair of pincers, wetted with water, he touches the neck, which immediately cracks, and, on being slightly struck, separates at the end of the blowing-pipe, and becomes attached to the iron rod. The vessel is next carried up to the mouth of the furnace, to be heated and softened, that the operator may finish it. If the vessel require a handle, the operator forms it separately, and unites it while melting hot, forming it with pincers to the requisite shape and pattern.—*Annealing* is the removing of the glass, after it has been blown or cast, into a furnace, whose heat is not sufficiently intense to melt it; and, gradually withdrawing the article from the hottest to a cooler part of the annealing chamber, till it is cold enough to be taken out for use. If cooled too suddenly, it is extremely brittle.—*Coloring.* The different colored glasses owe their tints to the different metallic oxides mixed with the materials while in a state of fusion. (See *Gems.*) In this manner are made those elegant *pastes*, which so faithfully imitate, and not unfrequently excel, in brilliancy, their originals, the gems of antiquity. The glass, however, for this purpose, is prepared in a peculiar manner, and requires great nicety. It combines purity and durability. *Opaque* glass is made by the addition of the oxide of tin, and produces that beautiful imitation of enamel which is so much admired. Dials for watches and clocks are thus made. The principal sorts of glass are the following: *Crown Glass*, the best window glass, is made of white sand, purified barilla, saltpetre, borax and arsenic, melted together; and, if the glass assume a yellowish hue, the defect is removed by adding a sufficient quantity of manganese. (See *Crown Glass.*)—*Newcastle Glass*, generally used in England, is of an ash color, frequently speckled, streaked and blemished. It is made from white sand, unpurified barilla, common salt, arsenic and manganese.—The *Bottle* or *Green Glass*, usually made of common sand, lime, and some clay, fused with an impure alkali, is very hard, and resists the corrosive action of all liquids much better than flint glass: the green color is owing to the iron: it is well adapted for chemical vessels.—*Flint Glass*, the most fusible of any, is used for bottles, utensils intended to be cut and polished, and for various ornamental purposes. The best kind is composed of white silicious sand, pearlash, red oxide of lead, nitrate of potash, and the black oxide of manganese. It fuses at a lower temperature than crown glass, has a beautiful transparency, a great refractive power, and a comparative softness, which enables it to be cut and polished with ease. On this account it is much used for glass vessels of every description, and especially those which are intended to be ornamented by cutting. It is also employed for lenses and other optical glasses. Flint glass is worked by blowing, moulding, pressing and grinding. Articles of complex form, such as lamps and wine-glasses, are formed in pieces, which are afterwards joined by simple contact, while the glass is hot. It appears that the red lead, used in the manufacture of flint glass, gives up a part of its oxygen, and passes to the state of a protoxide.—*Plate Glass*, so called from its being cast in plates or large sheets, is the most valuable, and is used for mirrors and the windows of carriages. It is composed of white sand, cleansed with purified pearlashes and borax. But should the metal appear yellow, it is restored to its pellucid transpa-

rency by the addition (in equal proportions) of a small quantity of manganese and arsenic. It is cast on a large, horizontal table, and all excrescences are pressed out by passing a large roller over the metal. To polish the glass, it is laid on a large, horizontal table of freestone, perfectly smooth; and then a smaller piece of glass, fastened to a plank of wood, is passed over the other till it has received its due degree of polish. But, to facilitate this process, water and sand are used, as in the polishing of marble; and, lastly, Tripoli stone, smalt and emery, to give it lustre. *Grinding* and *polishing* give plate glass a fine lustre. The grinder takes it rough out of the hands of the caster, and, laying it upon a stone table, to which it is fixed with stucco, he lays another rough glass, half the size of the former, upon it. To the smaller glass a plank is fastened, by means of stucco, and to the whole a wheel, made of hard, light wood, about six inches in diameter, by the pulling of which from side to side, and from end to end, of the glass, a constant attrition is kept up; and, by allowing water and fine sand to pass between the plates, the whole is very finely polished; but to give the finishing polish, powder of smalt is used. As the upper glass grows smoother, it is taken away, and a rougher one substituted in its stead; and so on till the work is done. Except in the very largest plates, the workmen polish their glass by means of a plank, having four wooden handles to move it; and to this plank a plate of glass is cemented, as above.

Achromatic Flint Glass. The excise laws of England have prevented English artists from attempting to melt glass on a proper scale for making lenses for achromatic telescopes; but in France, where no such restrictions exist, numerous attempts have been made to perfect the manufacture of flint glass for optical purposes; and M. Guinaud's labors have been finally crowned with complete success. The almost total impossibility of procuring flint glass exempt from striæ, suggested to this artist the construction of a furnace capable of melting two cwt. of glass in one mass, which he sawed vertically, and polished one of the sections, in order to observe what had taken place during fusion. He discovered his metal to be vitiated by striæ, specks or grains, with cometic tails; and, from time to time, as he obtained blocks, including portions of good glass, his practice was to separate them by sawing the blocks into horizontal sections, or perpendicular to their axes. A fortunate accident conducted him to a better process. While his men were one day carrying a block of this glass, on a hand barrow, to a saw mill which he had erected at the fall of the Doubs, the mass slipped from its bearers, and, rolling to the bottom of a steep and rocky declivity, was broken to pieces. M. Guinaud, having selected those fragments which appeared perfectly homogeneous, softened them, in circular moulds, in such a manner that, on cooling, he obtained disks that were afterwards fit for working. To this method he adhered, and contrived a way of clearing his glass while cooling, so that the fractures should follow the most faulty parts. When flaws occur in the large masses, they are removed by cleaving the pieces with wedges; then melting them again in moulds, which give them the form of disks; taking care to allow a little of the glass to project beyond one of the points of the edge, so that the optician may be enabled to use that portion of glass in making a prism, which shall give the measure of the index of refraction, and thus obviate the necessity of cutting the lens. The astronomical society of London have tried disks of M. Guinaud's flint achromatic glass, which seems entirely homogeneous, and exempt from fault. This material grinds and polishes much easier than the English flint glass.

Various ornamental forms are given to the surface of glass vessels by metallic moulds. The mould is usually of copper, with the figure cut on its inside, and opens with hinges to permit the glass to be taken out. The mould is filled by a workman, who blows fluid glass into its top. The chilling of the glass, when it comes in contact with the mould, impairs its ductility, and prevents the impression of the figure from being sharp. Some moulds, however, are made in parts, which can be suddenly brought together on the inside and outside of the glass vessel, and produce specimens nearly equal to cut glass.—*Cut Glass*, so called, is produced by grinding the surface with small wheels of stone, metal or wood. The glass is held to the surface of the wheels. The first cutting is with wheels of stone; then with iron, covered with sharp sand or emery; and, finally, with brush wheels, covered with putty. A small stream of water is kept continually running on the glass, to prevent the friction from exciting too much heat.

The physical properties of glass are of the highest importance. One of these

is that of preserving its transparency in a considerable heat, and remaining almost entirely without extension. Its expansibility is less affected by heat and cold than that of any other solid substance which has been accurately examined. On this account, it is especially fit for pendulums. Its great ductility, when heated, is also a remarkable property. It can, in this state, be drawn into all shapes, and even be spun into the finest threads. It may be cut by the diamond, and also by a hot iron, although the last manner is rather unsafe.

Drops of Glass, which have been let fall, while melted, into water, commonly called *prince Rupert's drops*, assume the form of an oval body, terminating in a long slender stem. They are also called *glass tears*. The large part may be struck with a hammer, or filed, without breaking; but if the stem is broken, the whole flies to pieces.

Glass Galls; a substance which floats upon melted glass, like scum or froth, called by the French *siel*, or *suif de verre*. It is principally alkaline, and attracts moisture from the air, so as even to become fluid. It is chiefly used for soldering silver, stands a strong heat, is a good flux for substances difficult to fuse, and keeps them long in a state of fusion. Potters also use it for glazing.

Glass Threads. The great ductility of glass enables it to be drawn into the finest threads. A piece of glass is held over the flame of a lamp, till it becomes soft: a hook is then fixed into it, and it is drawn out into a thread. The hook being fixed in the circumference of a small revolving cylinder, the glass thread is wound round the cylinder. Réaumur succeeded in obtaining these threads as fine as a spider's web.

Glass Windows. The mode of preparing glass was known long before it was thought of making windows of it. Houses in Oriental countries had commonly no windows upon the front, and towards the court-yard they were provided with curtains or a movable trellis-work; and, in winter, they were covered with oiled paper. The Chinese made use, for windows, of a very fine cloth, covered with a shining varnish; and, afterwards, of split oyster shells. They had also the art of working out the horns of animals into large and thin plates, with which they covered their windows. In Rome, the *lapis specularis* supplied the place of glass, and, from the description, seems to have been nothing but thin leaves of talc. Rich people had the windows or openings in their baths filled with thin plates of agate or marble. It was hastily concluded that glass was used for windows in the time of Titus, because fragments of glass plates have been found at Pompeii, which town was destroyed in his reign; but the first certain information of this mode of using glass is to be found in Gregory of Tours, who speaks of the churches having windows of colored glass in the 4th century after Christ, that is, in the reign of Constantine the Great, when they were to be seen in the church of St. Paolo Fuori le Mura. In France, talc or isinglass, white horn, paper soaked in oil, and thin shaved leather, were used instead of glass. The oldest glass windows at present existing are of the 12th century, and are in the church of St. Denis: they appear to have been preserved as part of the old church, which was erected before the year 1140, by the abbot Suger, a favorite of Louis le Gros. Suger had sapphires pounded up and mixed with the glass, to give it a blue color. Æneas Sylvius accounted it one of the most striking instances of splendor which he met in Vienna, in 1458, that most of the houses had glass windows. Felibien says that, in his time (1600), round glass disks were set in the windows in Italy. In France, on the other hand, there were glass windows in all the churches, in the 16th century, although there were but few in dwelling-houses.

Glass, Painting on. This art was, perhaps, known to the ancients, as Morisoli attempts to prove from passages in Seneca and Vopiscus Firmius; and some persons consider the fact established by a relic of art, described in Buonarotti's Observations upon some Fragments of ancient Vases of Glass, &c. Painted glass was much used, formerly, to ornament windows in churches and other public buildings, and, in unison with the whole style of Gothic churches, throws a gloomy shade over the whole interior. Speth distinguishes between the painting on glass, or glass-enamel, and two inferior kinds of the art; one painting upon, or rather behind, glass which is not perfectly transparent; and the other, which requires transparent glass, but makes use only of colored varnishes, as lacker, verdigris, &c., which do not resist moisture. Painting upon glass, properly so called, had its origin in the 3d century, about the time of the first specimens of mosaic. The more extensive knowledge, as well as use, of colored glass, was communicated from France to

England; and from thence, in the 8th century, by means of missionaries, to Germany and Flanders, and, in the 9th century, was carried to the north. Although the Italians used painted glass for mosaic work, yet they appear not to have applied it to church windows before the 8th century. We find undoubted traces of it in Bavaria towards the end of the 10th century. There was a glass-house at Tegern-see, near Münich. In the 11th century, the imitation of the best pieces of mosaic work in paintings upon glass was commenced. This art derived great advantages, at the end of the 14th century, from the important invention of enamel painting, or the art of fixing the metallic colors in glass. The art flourished most during the 15th and 16th centuries. France, England and the Netherlands boasted first-rate artists in this department, as Henriet, Monier of Blois, and Ab. von Diepenbecke. In Germany, Dürer gained celebrity in the same art. It declined in the 17th century, and, yielding to the force of fashion, it ceased to be heard of in the 18th. It was then chiefly carried on in England, by foreign artists. In the reign of James I, a school was founded by a Netherlander, Bernh. de Linge, who may be regarded as the father of modern painting upon glass. The school has continued to this day. There were some artists in the 17th and 18th centuries, who gained reputation by their paintings upon glass, as Eginton of Birmingham, Wolfgang Baumgärtner of Kufstein, in the Tyrol (who died 1761), and their contemporary Jouffroy, who painted, in a chapel in London, the resurrection of the Savior. The knowledge acquired by experience was not lost, but the practice of the art was very limited. This may be inferred from some treatises which are extant, as Viel's Art of Painting upon Glass. In Germany, painting upon glass was revived in the 19th century. M. S. Frank, of Nuremburg, first attempted to restore it to its proper rank. He has been employed as a painter on glass at the royal porcelain manufactory at Münich. The royal cabinet of medals possesses a Birth of Christ by him, and the chapel a Supper, which was made in imitation of Dürer's small Passion. (See Speth's paper in the *Kunstblatt*, or Journal of Arts, 1820, No. 27.) The works in painted glass produced at Berlin and Vienna, are not comparable with his. In the castle of Marienburg, in Prussia, recently rebuilt, are some paintings upon glass, which may even be compared to the ancient specimens.

Glass is a common term to designate a telescope. *Night-glass* is a telescope made for viewing objects at night.

Half-hour glass, frequently called *watch glass*, is used at sea to measure the time which each watch has to stay upon deck. To *flog* or *sweat* the glass, is to turn it before the sand has quite run out, and thereby, gaining a few minutes each half hour, to make the watch too short. *Glass* is used in the plural to denote the duration of a naval action; as, "They fought yard-arm and yard-arm *three glasses*," that is, an hour and a half.

Glatz; county and circle in the Prussian government of Breslau, surrounded by high mountains. The soil is fertile, and the air salubrious, and there are several mineral springs at Cudowa, Neurode and Reinertz. 360 square miles, with 61,400 inhabitants. The *Seefelder* (lake fields), which are always under water, which never freezes, and never increases nor diminishes, are 2000 feet high. The capital of the county is

Glatz, with 8200 inhabitants, an important fortress, which was besieged in 1742, 1759 and 1807. To the former county of Glatz belonged also the circle of Habelschwerdt, 297 square miles, with 39,000 inhabitants, in which are Landeck, containing warm baths, and Niederlangenau, containing acidulous springs.

Glauber, John Rodolph, a physician at Amsterdam, who died in 1668, at a very advanced age, had rendered important services in chemistry, notwithstanding his dreams of the transmutation of metals. Chemistry is indebted to him for an improved construction of furnaces, for facilitating many chemical processes, for the mode of preparing the fuming nitric acid by means of sulphuric acid, and for the salt (the sulphate of soda), which has been named from him, and which he discovered accidentally in common salt, as he was obtaining from it the fuming muriatic acid, by distillation with sulphuric acid. Astonished at finding a crystallized salt among the residuum, possessing medicinal properties, he named it *sal mirabile* (the wonderful salt). It is used as a purgative; is here and there found in a natural state, but is chiefly prepared by art, and is a neutral salt, containing water 56 parts, sulphuric acid 24.64, and soda 19.36. Its crystals are large, six-sided prisms, and it has a bitter, cooling taste. In a dry air, it falls into a white powder, and loses 56 parts in the 100 of its weight, but still retains its purgative properties, which are even increased in the part which remains.

Nearly all the Glauber's salt consumed in America is prepared from the sea-water, and principally at the large salt-works of Massachusetts. This salt is obtained only in the winter, and seems not to exist in solution in the sea-water, but to be formed by the mutual decomposition of the solutions of sulphate of magnesia and chloride of sodium at a freezing temperature. In fact, during the extreme cold weather, a crystalline deposit, consisting chiefly of sulphate of soda, is formed in the pickle vats, whilst, at temperatures above freezing, no other salts are obtained from the same menstruum, except muriate of soda, sulphate of magnesia, hydro-chlorates of magnesia and lime, &c.; but no sulphate of soda. That crystalline deposit is taken out with iron rakes, having strainers attached to them, and is purified, for sale, by crystallization; the best formed crystals are sometimes dried and sold in their impure state.*

Glaucus; a fisherman of Anthedon in Bœotia, who was received among the national deities of Greece, not long before the time of Æschylus, and to whom, as a god of the sea, the power of prophecy was attributed. Apollonius makes him render oracles to the Argonauts, on the coast of Mysia. (See Ovid, *Metamorph.*, xiii. 906.)

Glazing. To prevent the penetration of fluids, it is necessary that earthen vessels should be glazed, or covered with a vitreous coating. The materials of common glass would afford the most perfect glazing to crockery ware, were it not that the ratio of its expansion and contraction is not the same with that of the clay; so that a glazing of this sort is liable to cracks and fissures, when exposed to changes of temperature. A mixture of equal parts of oxide of lead and ground flints is found to be a durable glaze for the common cream-colored ware, and is generally used for that purpose. These materials are first ground to an extremely fine powder, and mixed with water to form a thin liquid. The ware is dipped into this fluid and drawn out. The moisture is soon absorbed by the clay, leaving the glazing particles upon the surface. These are afterwards melted by the heat of the kiln, and constitute a uniform and durable vitreous coating. The English and French manufacturers find it necessary to harden their vessels by heat, or bring them to the state of biscuit, before they are glazed; but the composition used by the Chinese resists water, after it has been once dried in the air, so as to bear dipping in the glazing liquid without injury. This gives them a great advantage in the economy of fuel.

Painters call *glazing* the laying a transparent color over one of a different tint.

Gleditsch, John Theophilus, professor of natural history and botany, and member of the academy of sciences at Berlin, was born at Leipsic, Feb. 5, 1714. He died at Berlin, October, 1786, where, after having lived and labored in many other places, he was superintendent of the botanic garden. He was a very scientific botanist, and was the first to produce a scientific arrangement of forest trees. Several very esteemed works were first published after his death, by his son-in-law Gerhard, at Berlin. Among the best are his *Catalogus Plantarum* (of the Ziethen garden at Trebnitz), his *Consideratio Epicriseos Siegesbckianæ in Linnæi Systema Plantarum, etc. Lucubraticuncula de Fuco subgloboso sessili et molli in Marchia reperiundo*, a German translation of which may be found in his dissertations upon botany, in 3 vols.; his Systematic Introduction to the Knowledge of Forests (*Systematische Einleitung zum Studium der Forstwissenschaft*); his Practico-Theoretical History of Medical Plants (*Theoretisch-praktische Geschichte der Medicinalpflanzen*); his Natural History of the most useful Domestic Plants (*Naturgeschichte der nützlichsten einheimischen Gewächse*); his *Botanica Medica* (published by F. W. A. Luders, one of his most distinguished pupils); and his Remarks in Relation to Botany and Medicine (*Bemerkungen in Bezug auf Botanik und Medicin*). His dissertations are to be found partly in the Memoirs of the Friends of Natural History, at Berlin, in the Annals of the Berlin Academy, and in the Varieties (*Mannigfaltigkeiten*) of Martini, as well as many valuable botanic catalogues. He also published the second edition of the *Philosophia Botanica* of Linnæus. The English naturalist Catesby has, in honor of him, given the name *Gleditsia* to an exotic plant.

Glee, in music; a vocal composition in three or more parts, generally consisting of more than one movement, the subject of which may be either gay, tender or grave, bacchanalian, amatory or pathetic.

Gleichen, Ernest, according to some,

* See Mr. D. B. Smith's *Essay on the Preparation of Glauber's and Epsom Salt and Magnesia, from Sea-Water*, in the first number of the Journal of the Philadelphia College of Pharmacy, first series.

Louis, count, sprang from a celebrated German family now extinct, went on a crusade to Palestine, fought against and was taken prisoner by the Turks. The following story is related of him, for the truth of which we will not vouch. One day, as the unfortunate man was at work on the road, the sultan's daughter saw him, and, moved by pity and love, offered him his freedom, if he would fly with her and make her his wife. In vain did he plead to her, that he had a wife and children at home. The princess, used only to the customs of her own country, saw no obstacle in that. They escaped, and arrived by sea at Venice. The count here learned that his wife and children were yet living, and anxiously awaiting his return. He hastened to Rome, and, after his sultana was baptized, he obtained permission from the pope to keep both his wives, with whom he lived thenceforth in happiness; and his first wife had the generosity to divide her husband's love with her, without whose help she would never again have seen his face. The count's monument, upon which he was represented with both his wives, was formerly to be seen in the Benedictine church upon the Petersberg at Erfurt, and is now at Gotha.

Gleim, John William Louis, born at Ermsleben, a small town in the principality of Halberstadt, April 2, 1719, died February 18, 1803, at Halberstadt, where he was secretary to the cathedral chapter, and at the same time canon of the chapter of Waldeck. He lost his father when young, his poem on the death of whom shows the early developement of his poetical talent. In 1738, he went to the university of Halle, after having been maintained up to that time by charitable persons. Uz was one of his fellow students and friends; both took the Roman and Greek poets as their models. In 1740, Gleim left the university, and, after some time, became secretary to prince William, son of the margrave of Brandenburg-Schwedt. At this period, he made the acquaintance of Kleist, another German poet, and became his intimate friend; the two poets are mentioned in German literature like two brothers. With Sulzer, Ramler, Graun, &c., they joined the party of Bosmer against that of Gottsched. (q. v.) The second Silesian war, in 1744, separated the two friends; and Gleim, after many vicissitudes of fortune, was appointed secretary of the cathedral chapter of Halberstadt, in 1747. Gleim's element was friendship. He corresponded with all the principal wits in Germany, and enjoyed the affection of all. His correspondence is, therefore, very interesting. Gleim was never married. His niece, Sophia Dorothea Gleim, whom he has frequently sung, under the name of Gleminde, kept his house. He acquired the greatest reputation by his martial songs, which appeared under the name and in the character of an old grenadier, at the time when Frederic the Great filled all Europe with the fame of his achievements. Two years before his death, he became blind. Klopstock wrote an ode to his memory. He was buried in his garden, in Halberstadt, and, according to his last will, some simple urns, with the names of his friends who died before him, are arranged around his own. His works have been published; Gleim's *Sämmtliche Werke, erste Originalausgabe aus des Dichters Handschriften durch W. Körte;* 7 small vols. (Halberstadt, 1811—13). Körte has also written his life.

Glendower, Owen, who has been sometimes called the *Wallace of Wales.* The precise date of his birth is uncertain, some fixing it in 1349, others in 1354. The place of his nativity was Trefgarn, in Pembrokeshire, where he was born of Ellen, a lineal descendant from Catharine, daughter and heiress to Llewellyn, last prince of Wales. At an early age, he was sent to London for education, and, entering himself of one of the inns of court, studied for the English bar, but relinquished the profession on being appointed *scutiger* to Richard II. Jolo Goch, a contemporary bard, gives a splendid description of his family mansion, or rather palace; and, indeed, he appears at this time to have exercised considerable feudal influence, carrying on, with great spirit, a contest of some duration with Reginald, lord Grey de Ruthyn, respecting an estate called Croesau, in which he was, for a time, successful; but, on the deposition of his royal patron, by Henry of Bolingbroke, his old antagonist took advantage of the unsettled state of the country to renew his usurpation. Nor did his evil practices end here; for Grey, being charged with the delivery of a summons to Owen, from the new king, to attend him on his Scotch expedition, purposely neglected to deliver it. Glendower was, in consequence, outlawed for disaffection; his enemy seized upon all his lands, and the parliament treated his remonstrances with neglect. Glendower forcibly dispossessed Grey of his lands, and, having succeeded in raising a considerable force, caused himself to be pro-

claimed prince of Wales, September 20, 1400. To this measure he is said to have been incited by some traditionary prophecies of Merlin; and certain it is, that many of his countrymen of consideration were induced, by the same motives, to join his standard. He defeated the king's troops under sir Edward Mortimer, and Henry put in motion against him three grand divisions of his army; but Owen, retiring to the mountains, foiled all attempts to bring him to action; and, the rebellion of the Percys breaking out, he joined the coalition, causing himself, at the same time, to be formally crowned, at Machynlaeth, in Montgomeryshire, "sovereign of Wales." The rashness of Henry Percy brought on the fatal battle of Shrewsbury, before all his Welsh auxiliaries had come up. Their prince, however, is said to have been so near as to have reconnoitred the action from the top of a lofty tree; but, seeing all was lost, directly retreated, and continued his marauding warfare. This he kept up with various success, occasionally assisted by Charles VI of France, with whom a treaty of his is yet extant, dated 1404, in which he is styled "Owenus, Dei Gratiâ Princeps Walliæ." Finding it impossible to subdue him, Henry, in 1415, condescended to treat with him; but Owen died during the negotiation, which was, however, continued and ratified by his son, Meredyd ap Owen, February 24, 1416.

Globe, in geometry; a round, solid body, which may be conceived to be generated by the revolution of a semicircle about its diameter. (See *Sphere.*) *Globe*, or *Artificial Globe*, in geography and astronomy, is more particularly used to denote a globe of metal, plaster, paper, pasteboard, &c., on the surface of which is drawn a map, or representation of either the heavens or the earth, with the several circles which are conceived upon them; the former being called the *terrestrial globe*, and the latter the *celestial globe*. The *Celestial Globe* is an inverted representation of the heavens, on which the stars are marked according to their several situations. The diurnal motion of this globe is from east to west, to represent the apparent diurnal motion of the sun and stars. The eye is supposed to be placed in the centre of this globe, but, in fact, it is beyond the stars. The *Terrestrial Globe* is an artificial representation of the earth, exhibiting its great divisions. The diurnal motion of this globe is from west to east.—The axis of the earth is an imaginary line passing through its centre; and the wire on which the artificial globe turns, represents this line. The poles of the earth are the extremities of this axis; that on the north is called the *arctic*, that on the south, the *antarctic* pole. The celestial poles are imaginary points in the heavens, exactly above the terrestrial poles. The brazen meridian is the circle in which the artificial globe turns, divided into 360 degrees. Every circle is supposed to be divided into 360 equal parts, called *degrees*, each degree into 60 equal parts, called *minutes*, each minute into 60 equal parts, called *seconds*, &c.; a degree is therefore only a relative idea, and not an absolute quantity, except when applied to a great circle of the earth, as to the equator or to a meridian, in which cases it is 60 geographical miles, or 69½ English miles. A degree of a great circle in the heavens is a space nearly equal to twice the apparent diameter of the sun; or to twice that of the moon, when considerably elevated above the horizon. Degrees are marked with a small cipher, minutes with one dash, seconds with two, thirds with three, &c.; thus, 25° 14′ 22″ 35‴ are 25 degrees, 14 minutes, 22 seconds, 35 thirds. In the upper semicircle of the brass meridian, these degrees are numbered 10, 20, &c., to 90, from the equator towards the poles, and are used for finding the latitudes of places. On the lower semicircle of the brass meridian, they are numbered 10, 20, &c., to 90, from the poles towards the equator, and are used in the elevation of the poles. (See *Degree.*) Great circles, as the equator, ecliptic, and the colures, divide the globe into two equal parts. Small circles, as the tropics, polar circles, parallels of latitude, &c., divide the globe into two unequal parts. Meridians, or lines of longitude, are semicircles, extending from the north to the south pole, and cutting the equator at right angles. Every place upon the globe is supposed to have a meridian passing through it, though there be only 24 drawn upon the terrestrial globe; the deficiency is supplied by the brass meridian. When the sun comes to the meridian of any place (not within the polar circles), it is noon or mid-day at that place. The first meridian is that from which geographers begin to reckon the longitudes of places. In English maps and globes, the first meridian is a semicircle, supposed to pass through London, or the royal observatory at Greenwich. The equator (q. v.), a great circle of the earth, equidistant from the poles, divides the globe into two hemispheres, northern and southern. The latitudes of places are reckoned from the equator northward and

southward, and the longitudes are reckoned upon it eastward and westward. The equator, when referred to the heavens, is called the *equinoctial*, because, when the sun appears in it, the days and nights are equal all over the world, viz., 12 hours each. The declination of the sun, stars, and planets, is counted from the equinoctial northward and southward; and their right ascensions are reckoned upon it eastward round the celestial globe, from 0 to 360 degrees. The ecliptic (q. v.) is a great circle in which the sun makes his apparent annual progress among the fixed stars. It is the real path of the earth round the sun. The points at which the ecliptic intersects the equator, at an angle of 23° 28′, are called the *equinoctial points:* the ecliptic is situated in the middle of the zodiac. The apparent path of the sun is either in the equinoctial, or in lines nearly parallel to it, and his apparent annual path may be traced in the heavens, by observing what particular constellation in the zodiac is on the meridian at midnight; the opposite constellation will show, very nearly, the sun's place at noon on the same day. The zodiac (q. v.), on the celestial globe, is a space which extends about 8° on either side of the ecliptic. Within this belt the motions of the planets are performed.—*Signs of the Zodiac.* The ecliptic and zodiac are divided into 12 equal parts, called *signs*, each containing 30°; and the sun makes his apparent annual progress through the ecliptic, at the rate of nearly a degree in a day. The names of the signs, and the days on which the sun enters them, are given in the article *Ecliptic.* The colures, two great circles passing, one through the points Aries and Libra and the poles of the world, the other through Cancer and Capricorn and the poles of the world, have their uses in mechanical geography. That passing through Aries and Libra is called the *equinoctial* colure; that passing through Cancer and Capricorn, the *solstitial* colure. The tropics are two smaller circles, each 23° 28′ from the equator, with which they are parallel; the northern is called the *tropic of Cancer*, the southern the *tropic of Capricorn.* The tropics are the limits of the torrid zone, northward and southward; and within these boundaries alone is the sun ever seen vertical. The polar circles are two small circles, parallel to the equator (or equinoctial), at the distance of 66° 32′ from it, and 23° 28′ from the poles. The northern is called the *arctic*, the southern, the *antarctic* circle. Parallels of latitude are small circles drawn through every ten degrees of latitude, on the terrestrial globe, parallel to the equator. Every place on the globe is supposed to have a parallel of latitude drawn through it, though there are generally only 16 parallels of latitude drawn on the terrestrial globe. The hour circle, on the artificial globe, is a small circle of brass, with an index or pointer fixed to the north pole. The hour circle is divided into 24 equal parts, corresponding to the hours of the day; and these are again subdivided into halves and quarters. The horizon (q. v.) is a great circle, which separates the visible half of the heavens from the invisible; the earth being considered as a point in the centre of the sphere of the fixed stars. Horizon, when applied to the earth, is either sensible or rational. The sensible or visible horizon is the circle which bounds our view, where the sky appears to touch the earth or sea. The sensible horizon extends only a few miles; for example, if a man of six feet high were to stand on a large plane, or on the surface of the sea, the utmost extent of his view, upon the earth or the sea, would be only a very few miles. The rational or true horizon, is an imaginary plane, passing through the centre of the earth, parallel to the sensible horizon. It determines the rising and setting of the sun, stars and planets. The wooden horizon, circumscribing the artificial globe, represents the rational horizon on the earth. This horizon is divided into several concentric circles, arranged in the following order: One contains the 32 points of the compass, divided into half and quarter points. The degrees in each point are to be found in the amplitude circle. Another contains the 12 signs of the zodiac, with the figure and character of each sign; and another contains the days of the month, answering to each degree of the sun's place in the ecliptic, and the 12 calendar months. The cardinal points of the horizon are east, west, north and south. The cardinal points in the heavens are the zenith, the nadir, and the points where the sun rises and sets. The cardinal points of the ecliptic are the equinoctial and solstitial points, which mark out the four seasons of the year; and the cardinal signs are, ♈ Aries, ♋ Cancer, ♎ Libra, and ♑ Capricorn. The zenith is a point in the heavens exactly over head, and is the elevated pole of our horizon. The nadir is a point in the heavens exactly under our feet, being the depressed pole of our horizon, and the zenith, or elevated pole, of the horizon of

our antipodes. The pole of any circle is a point on the surface of the globe, 90° distant from every part of the circle. Thus the poles of the world are 90° from every part of the equator; the poles of the ecliptic (on the celestial globe) are 90° from every part of the ecliptic, and 23° 28′ from the poles of the equinoctial; consequently they are situated in the arctic and antarctic circles. Every circle on the globe, whether real or imaginary, has two poles diametrically opposite to each other. The equinoctial points are Aries and Libra, where the ecliptic cuts the equinoctial. The point Aries is called the *vernal equinox*, and the point Libra the *autumnal equinox*. When the sun is in either of these points, the days and nights on every part of the globe are equal to each other. The solstitial points are Cancer and Capricorn. When the sun enters Cancer, it is the longest day to all the inhabitants on the north side of the equator, and the shortest day to those on the south side. When the sun enters Capricorn, it is the shortest day to those who live in north latitude, and the longest day to those who live in south latitude. A hemisphere is half the surface of the globe; for every great circle divides the globe into two hemispheres. The horizon divides the upper from the lower hemisphere in the heavens; the equator separates the northern from the southern on the earth; and the brass meridian, standing over any place on the terrestrial globe, divides the eastern from the western hemisphere. The latitude of a place, on the terrestrial globe, is its distance from the equator in degrees, minutes, or geographical miles, &c., and is reckoned on the brass meridian, from the equator towards the north or south pole. (See *Latitude.*) The quadrant of altitude is a thin piece of brass, divided upwards from 0 to 90°, downward, from 0 to 18°; when used, it is generally screwed to the brass meridian. The upper divisions determine the distances of places on the earth, the distances of the celestial bodies, their latitudes, &c.; and the lower divisions are applied to finding the beginning, the end, and duration of twilight. The longitude of a place, on the terrestrial globe, is the distance of the meridian of that place from the first meridian, reckoned in degrees and parts of a degree, on the equator. Longitude is either eastward or westward, according as a place is to the east or west of the first meridian. No place can have more than 180°, or half the circumference of the globe. (See *Longitude.*) Hour circles are the same as meridians. They are drawn through every 15° of the equator, each answering to an hour. The brass meridian and these circles always correspond. (For an account of climate, see *Climate.* For an account of the zones, see *Zone.*) The crepusculum, or twilight, is that faint light which we perceive before the sun rises and after he sets. It is produced by the rays of light being refracted in their passage through the earth's atmosphere, and reflected from the different particles thereof. The twilight is supposed to end in the evening, when the sun is 18° below the horizon. The angle of position between two places on the terrestrial globe, is an angle at the zenith of one of the places, formed by the meridian of that place, and a vertical circle passing through the other place, measured on the horizon, from the elevated pole towards the vertical circle. Rhumbs are the divisions of the horizon into 32 parts, called the *points of the compass.* *Problem* 1.—*To find the latitude of any place.*—Rule. Turn the globe till the place comes to the graduated edge of the brazen meridian, and the degree on the meridian with which the place corresponds is the latitude north or south, as it may be north or south of the equator. *Problem* 2.—*To find the longitude of any place.*—Rule. Turn the globe till the place comes to the brazen meridian, and the degree on the equator, intersected by the brazen meridian, shows the longitude. *Problem* 3.—*To find any place on the globe, having the latitude and longitude of that place given.*—Rule. Find the longitude of the given place on the equator, bring it to that part of the brass meridian which is numbered from the equator towards the poles; and then, under the given latitude, on the brass meridian, you will find the place required. *Problem* 4.—*To find the difference of latitude of any two places.*—Rule. If the places are in the same hemisphere, bring each to the meridian, and subtract the latitude of the one from that of the other; if in different hemispheres, add the latitude of the one to that of the other, and the sum will show the difference of latitude. *Problem* 5.—*To find the difference of longitude between any two places.*—Rule. Bring one of the places to the brazen meridian; mark its longitude; then bring the other place to the meridian, and the number of degrees between its longitude and that of the first mark is the difference of longitude. When this sum exceeds 180°, take it from 360°, and the remainder will be the difference of longitude. *Problem* 6.—*To find the distance between two*

places.—Rule. When the distance is less than 90°, lay the quadrant of altitude over both the places, so that the division marked O may be on one of the places; then the degree cut by the other place will show the distance in degrees. Multiply these degrees by 69½, and the product will be the distance in English miles. The distance between two places, with the angle of position, may be found, at the same time, in the following manner: Elevate the globe for one of the places, bring it to the meridian, screw the quadrant of altitude over it; then move the quadrant till it come over the other place, and observe what degree of it this last place cuts. Subtract this distance from 90°, and the remainder will be the distance in degrees. The quadrant of altitude, on the horizon, will now show the angle of position. When the distance is greater than 90°, find the antipodes of one of the places, and measure the distance between this and the other place with the quadrant of altitude. Subtract this distance from 180, and the remainder will be the whole distance required. *When the angle of position is required*, this case may be performed thus: 1. Elevate the globe for the antipodes of one of the places, and, having fixed the quadrant over it, bring its edge over the other place, and add the degree cut by it to 90°, and the sum will be the distance required. 2. The quadrant will show the position; only, W. must be read for E.; E. for W.; N. for S.; and S. for N. *Problem* 7.—*The hour being given at any place, to find what hour it is in any other part of the world.*—Rule. Bring the place, at which the time is given, to the meridian, set the index to the given hour, then turn the globe till the other place comes to the meridian, and the index will show the time required. *Obs.* The earth turns round on its axis from the W. towards the E., and causes a different part of its surface to be successively presented to the sun. When the meridian of any place is directly opposite to the sun, it is then noon to all places on that meridian. Meridians towards the E. come opposite to the sun sooner than those towards the W.; and hence the people there have noon much sooner, and all the other hours of the day will be proportionably advanced. The earth takes 24 hours to turn on its axis, and the rate at which it turns every hour may be found, by dividing 360° by 24; the quotient, 15, is the number of degrees the earth turns in an hour. Hence it is that a place lying 15° to the east of another, will have noon one hour sooner; if it is 30° or 45°, it will have noon two or three hours sooner than the other; and so on, in the same proportion, for all places farther removed. Places that lie 15°, 30°, or 45°, to the W. of that place at which it is noon, will have noon one, two, or three hours later; and so on, in the same proportion. *Problem* 8.—*To adjust the globe for the latitude, zenith, and sun's place.*—Rule. For the *latitude:* elevate the pole above the horizon according to the latitude of the place, and the globe will be adjusted for the latitude. For the *zenith:* screw the quadrant of altitude on the meridian, at the given degree of latitude, counting from the equator towards the elevated pole, and the globe will be rectified for the zenith. For the *sun's place:** find the sun's place on the horizon, and then bring the place which corresponds thereto, found on the ecliptic, to the meridian, and set the hour index to 12 at noon; then will the globe be adjusted for the sun's place. *Problem* 9.—*To find the sun's declination.*—Rule. Bring the sun's place for the given day to the brass meridian, and the degree over it will be the declination sought; or bring the day of the month marked on the *analemma*, to the brass meridian, and the degree over it will be the declination, as before. 1. The declination of the sun being its distance north or south from the equator, this problem is exactly the same as that for finding the latitude of a place. 2. The greatest north declination, 23° 28′, is when the sun enters Cancer, June 21st. The greatest south declination, 23° 28′, is when it enters Capricorn, December 21st. *Problem* 10.—*To find the sun's rising and setting for a given day, at a given place.*—Rule. Elevate the globe for the sun's declination; bring the given place to the meridian; set the index to 12, and turn the globe till the given place comes to the eastern edge of the horizon; then the index will show the time of the sun's rising. Next bring the given place to the western edge of the horizon, and the index will show the hour at which the sun sets. If the hour circle have a double row of figures, make use of that which increases towards the E.; the sun's rising and setting may then be found at once, by bringing the place only to the eastern edge of the horizon; for the index will point on one row to the hour of rising, and on the other (that which increases towards the

* Find the day of the month on the horizon, and against it, in the adjoining circle, will be found the sign and degree in which the sun is for that day.

W.) to the hour of setting. *By this problem may be found the length of the day and night.* Double the time of the sun's setting, and it will give the length of the day. Double the time of the sun's rising, and it will give the length of the night. *Problem 11.—To find all those places in the torrid zone to which the sun is vertical on a given day.*—Rule. Find the sun's place for the given day, bring it to the meridian, mark the declination, and turn the globe round, when all those places which pass under that mark of the meridian, will have the sun vertical on the given day. By the analemma, bring the day of the month, marked upon the analemma, to the brazen meridian, and mark the declination; then the places will be found as above. *Problem 12.—The day, hour and place being given, to find at what places of the earth the sun is then rising and setting; where it is noon and midnight.*—Rule. Find the place to which the sun is vertical at the given hour, bring the same to the meridian, and adjust the globe to a latitude equal to the sun's declination. Then, to all places under the western side of the horizon, the sun is rising; to those above the eastern horizon, the sun is setting; to all those under the upper half of the brazen meridian, it is noon; and to all those under the lower half, it is midnight. *Problem 13.—To show, by the globe, the cause of day and night.*—The sun shines upon the earth, and illuminates that half only which is turned towards him: the other half is in darkness. But, as the earth turns round on its axis, from W. to E., once in 24 hours, every meridian upon the earth will, in that time, successively be presented to the sun, and be deprived of its light again. Rule. Elevate the globe for the sun's declination, so that the sun may be in the zenith, and the horizon will be the terminator, or boundary circle, of light and darkness: that half of the earth above the horizon enjoys light; that half below the horizon will be in darkness. Put a patch upon a globe, to represent any place, turn the globe round from W. to E., and when the place comes to the western side of the horizon, the sun appears to the inhabitants of that place to be rising in the E.; but it is more properly the inhabitants of that place rising in the W. Go on to turn the globe round, and the place will ascend higher towards the meridian in a contrary direction. When the place has arrived at the meridian, it will then be noon there, and the sun will be at his greatest altitude for that day. Continue to turn the globe, and the place will gradually recede from the meridian, and decline towards the eastern horizon, which will cause the appearance of the sun descending towards the W. When the place has arrived at the eastern horizon, as it is then going below the boundary of light and darkness, the sun will appear to be setting in the W. The place, being now at a greater distance than 90° from that point where the sun is vertical, is deprived of his light, and continues in darkness till, by the revolution of the earth, it arrives again at the western horizon, when the sun will appear to rise as before. The sun is obviously rising, at the same time, to all places on the western side of the horizon, and setting, at the same time, to all places on the eastern side of the horizon. *Problem 14.—To show, by the globe, the cause of the variety of the seasons.*—When the sun is in the equator, the horizon will represent the terminator, or boundary circle of light and darkness; and, the poles being made to coincide with it, we shall have a fair representation of the two seasons, spring and autumn; for, its rays then extending 90° every way from the vertical point, both poles will be illuminated. When the sun is in the tropic of Cancer, being 23½° farther to the N. than before, his rays will extend 23½° beyond the north pole, on the opposite meridian: they will not, however, reach the south pole by 23½°; they will extend to the antarctic only, being 90° distant from the tropic of Cancer: hence, to make the horizon the terminator in this case, the north pole must be elevated 23½° above the horizon, and we shall have the summer season to Europeans. When the sun is in the tropic of Capricorn, the reverse of this takes place; for the sun's rays then extend 23½° beyond the south pole, on the opposite meridian, and only as far north as the arctic circle: hence, to make the horizon the terminator in this case, the south pole must be elevated 23½° above the horizon, and we shall have the winter season to Europeans. The problems thus given are only to be considered as specimens of what may be performed. On the terrestrial globe, Butler describes 57; while, on the celestial sphere, the number and variety are still much greater. It is said that Anaximander of Miletus, a pupil of Thales, who flourished about the 50th Olympiad (580 B. C.), invented the terrestrial globe. That Ptolemy had an artificial globe, with the universal meridian, appears from his Almagest. (q. v.) The ancients likewise made celestial globes. Among the moderns, several have distinguished them-

selves in the construction of globes. The Venetian Coronelli (who died 1718) prepared, in 1683, with the assistance of Claudius Molinet and other Parisian artists, a terrestrial globe, for Louis XIV, 12 Parisian feet in diameter. The same artist made a celestial globe of the same size. Funk, in Leipsic, published, in 1780, models in the form of cones (*coniglobia*), as substitutes for celestial globes. These cones may be made almost as serviceable as globes, and are incomparably cheaper. Some of the best modern globes are those made since 1790, at Nuremberg, after the direction of the famous observer Bode. Adam and Cary's globes, of London, are very good. Globes have been lately made in England, for the use of learners, with nothing but the meridians and parallels of latitude drawn indelibly on them. They are covered with a substance on which drawings can be made with a slate pencil, and easily effaced. In the U. States, white globes have been prepared, on which the pupil can draw with a black lead pencil, and rub out the work at pleasure. Either sort must be highly useful in schools where geography is carefully studied. Among the most remarkable globes in existence, that of Gottorp, in the academy of sciences of Petersburg, is worthy of notice. This is a large concave sphere, 11 feet in diameter, containing a table and seats for 12 persons, to whom the inside surface represents the visible phenomena of the heavens. The stars are distinguished by gilded nails, according to their respective magnitudes, and arranged in groups, as the different constellations require. The outside is a terrestrial globe, representing the land and water on the surface of the earth. It is called the *globe of Gottorp*, from being substituted for one originally made in that place, which, with inconceivable labor, was conducted upon rollers and sledges, over snow, and through forests, to Riga, and thence by sea to Petersburg. In 1751, it was consumed by fire, and from its iron plates and materials, the present globe was made. But, large as these globes are, they become diminutive when compared with the sphere constructed by the late doctor Long. This is 18 feet in diameter; and it will enable 30 persons to sit within its concavity, without any inconvenience. The entrance is over the south pole, by six steps. This wonderful machine stands in Pembroke hall, in the university of Cambridge. All the constellations and stars of the northern hemisphere, visible at Cambridge, are painted upon plates of iron, which, joined together, form one concave surface. Unhappily, it is now very much damaged.—*The Celestial Globe.* The general definitions given of the terrestrial globe, apply also to the celestial, the various circles of which are more aptly illustrated by the armillary sphere,* which is well adapted to give youth just notions of those imaginary circles, which astronomers have applied to what is vulgarly called the *concave sphere of the heavens;* but by means of those circles, we investigate, with the nicest accuracy, the motions of the celestial bodies. There are six great circles of the sphere, which require particular attention, but which the reader is now acquainted with: they are, the horizon, the meridian, the equator, the ecliptic, the equinoctial colure, and the solstitial colure. The sphere is contained in a frame, on the top of which is a broad circle, representing the meridian. It is suspended on two pins, at opposite points of the meridian. These pins are a continuation of the axis of the sphere both ways, and as the sphere turns round upon them, they are considered as poles, north and south. The equator goes round the sphere, exactly in the middle, between the two poles. The ecliptic, the colures, the tropics, and polar circles, have been already defined, and are easily discovered. The horizon is graduated, according to the division of the circle, into quadrants and degrees; and, to refer celestial objects to the horizon, we have also the points of the compass laid down. Hence the amplitude, or distance, of heavenly bodies, from the E. and W. points, and their azimuth, or distance from the meridian, are reckoned on the horizon of the armillary sphere. The graduation of the equator enables us to fix the right ascension of celestial, and the longitude of terrestrial objects. The graduation of the ecliptic serves to indicate, in the armillary sphere, the latitude and longitude of celestial bodies. The colures are, in a manner, the limits of the year, pointing out the seasons by their two opposite points of the ecliptic. The hour circle tells us in what time any motion of the earth, in the centre, is performed. In fine, many details of the science may be pleasingly and popularly illustrated by this contrivance. *The appearances of the stars in the heavens illustrated by the armillary sphere.*—By placing small patches of paper

* So called because it consists of a number of rings of brass, which the old Romans named *armillæ*, from their resemblance, perhaps, to bracelets, or rings for the arms.

on the different circles, to represent stars, we perceive, that those which are farthest from the poles will describe the greatest circles; and that the greatest circles are described by those stars situated in the celestial equator. A star has acquired its greatest elevation when it comes to the upper semicircle of the meridian, and its greatest depression when it is at the lower circle of the meridian: the meridian bisects its arc of apparition. Some circles of revolution are wholly above, others entirely below, the horizon; therefore the patches on those circles show us which stars descend below, or which never ascend above, the horizon. And any object, whose circle of revolution is on the same side of the equator with the elevated pole, is longer visible than it is invisible; the contrary holds true if it be on the other side of the equator. The following definitions are more immediately applicable to the celestial globe: The declination of the sun, of a star, or planet, is its distance from the equinoctial, northward or southward. When the sun is in the equinoctial, he has no declination, and enlightens half the globe, from pole to pole. As he increases in north declination, he gradually shines farther over the north pole, and leaves the south pole in darkness: in a similar manner, when he has south declination, he shines over the south pole, and leaves the north pole in darkness. The greatest declination the sun can have, is 23° 28′; the greatest declination a star can have, is 90°, and that of a planet, 30° 28′ north or south. The latitude of a star, or planet, is its distance from the ecliptic, north or south, reckoned towards the pole of the ecliptic, on the quadrant of altitude. Some stars, situate in and about the pole, have 90° of latitude; the planets have only 8°; and the sun, being always in the ecliptic, has no latitude. The longitude of a star, or planet, is reckoned by the degrees of the ecliptic, from the point Aries round the globe. On the celestial globe, the longitude of the sun corresponds with the sun's place on the terrestrial globe. The right ascension of the sun, or a star, is that degree of the equinoctial which rises with the sun, or a star, in a right sphere, and is reckoned from the equinoctial point Aries eastward round the globe. Oblique ascension of the sun, or a star, is that degree of the equinoctial which rises with the sun, or a star, in an oblique sphere, and is likewise counted from the point Aries eastward round the globe. Oblique descension of the sun, or a star, is that degree of the equinoctial which sets with the sun, or a star, in an oblique sphere. The ascensional or descensional difference is the difference between the right and oblique ascension, or the difference between the right and oblique descension; and, with respect to the sun, it is the time he rises before six in the spring and summer, or sets before six in the autumn and winter. The angle of position of a star, is an angle formed by two great circles intersecting each other in the place of the star, the one passing through the pole of the equinoctial, the other through the pole of the ecliptic. The poetical rising and setting of the stars, is so called because the ancient poets referred the rising and setting of the stars to the sun. When a star rose with the sun, or set when the sun rose, it was said to rise and set *cosmically*. When a star rose at sunsetting, or set with the sun, it was said to rise and set *achronically*. When a star first became visible in the morning, after having been so near the sun as to be hid by the splendor of his rays, it was said to rise *heliacally*; and when a star first became invisible in the evening, on account of its nearness to the sun, it was said to set *heliacally*. A constellation (q. v.) is an assemblage of stars, on the surface of the celestial globe, circumscribed by the outlines of some assumed figure, as a bull, a bear, a lion, &c. This division of the stars into constellations, directs us to any part of the heavens where a particular star is situated. The zodiacal constellations are 12 in number; the northern constellations 41, and the southern 46, making in the whole 99. The largest stars are called *stars of the first magnitude*. Those of the sixth magnitude are the smallest that can be seen by the naked eye.

Globular Chart; a name given to the representation of the surface, or of some part of the surface, of the terrestrial globe, upon a plane, wherein the parallels of latitude are circles nearly concentric, the meridian curves bending towards the poles, and the rhumb-lines are also curves. (See *Map*.)

Glogau, or Gross-Glogau, an important Prussian fortress in Silesia, in the government of Liegnitz, not far from the Oder, with 11,200 inhabitants, of whom 1230 are Jews, is the seat of a superior court, and has a Lutheran and a Catholic gymnasium. The last duke of Glogau died in 1476, and the principality fell to the crown of Bohemia. Frederic the Great took Glogau in 1741, and strengthened its fortifications. After the battle of Jena, the French occupied it until 1814, when it was delivered up to the Prussians,

according to the terms of the armistice concluded with the then count d'Artois. The city has some manufactories and a brisk inland trade. Lat. N. 51° 38′; lon. E. 16° 6′ 53″. Twenty leagues N. W. of Breslau.

Gloria in Excelsis, Gloria Patri; glory to God in the highest. (See *Doxology*.)

Gloriosa Superba; an ornamental plant, native of India, and belonging to the natural order *liliaceæ*. The root is perennial; the stem herbaceous, weak, from six to ten feet high, bearing two opposite lateral branches; the leaves alternate, terminating in tendrils; the flowers remarkably elegant, of a beautiful red and yellow color, provided with six long, lanceolate undulated petals, which are entirely reflexed. It is a tender stove plant, and great heat is necessary to produce the flowers. During winter, the roots should be kept in a warm place, packed in dry sand, without water.

Gloss; the explanation of an obscure word, particularly of an antiquated or obsolete word. Hence *glossist*, an interpreter, and *glossary*, a collection of such words. A kind of poems, which originated in Spain and Portugal, and has been imitated in Germany, is called *gloss*. It begins with a theme of two, three or more verses, which is developed in an equal number of stanzas, each of which ends with one of those verses, in the order in which they originally stand. The two Schlegels call them also *variations*, because they resemble variations in music.

Glottis (from γλωττα, the tongue); the superior opening of the larynx at the bottom of the tongue.

Gloucester; a city of England, the capital of the county of the same name, on the Severn, about 30 miles above its junction with the Bristol channel. The chief manufactory at Gloucester is that of pins, which is the most extensive in the kingdom; and a bell foundery has also been long established. The city consists chiefly of four spacious streets, meeting each other in the centre. The public buildings are handsome; but the chief object of interest is the cathedral of St. Peter, originally the abbey. This building combines in one specimen the architecture of successive ages, the Norman and Saxon, with some of the finest examples of the Gothic or English. Gloucester contains, also, five parish churches, several meeting-houses, and a synagogue; two grammar schools, a charity school, and several hospitals. A mineral spring, surpassing those of Cheltenham in its powers, has lately been discovered. A handsome pump-room has been erected, with hot, cold and vapor baths. Gloucester is the see of a bishop. It returns two members to parliament, the number of electors being 2000. It is governed by a mayor, 12 aldermen, &c. Population, 9744. 106 miles W. by S. London.

Glover, Richard, an English poet, was the son of Richard Glover, a merchant of London, where he was born in 1712. Being intended for trade, although he received a classical education at a private school, it was not followed up by an attendance at either university. He early displayed an attachment to the belles-lettres, and, when only sixteen, wrote some verses to the memory of sir Isaac Newton, which obtained considerable attention. In 1737, he published the epic poem of Leonidas, which was favored by the party in opposition to sir Robert Walpole, headed by Frederic prince of Wales. It abounds in noble sentiments, considerably varied by incident and description; but it wants interest, and is not sufficiently imaginative for lasting popularity. The Progress of Commerce followed in 1739; one of the objects of which was to rouse a spirit of national hostility against the Spaniards and the ministry—a purpose which was much more effectually answered by his celebrated ballad of Hosier's Ghost. In 1742, he was chosen by the London merchants to conduct an application to parliament, complaining of the neglect of trade; and the speech which he pronounced at the bar of the house was printed, and much applauded. While rising to notice, as a public man, however, he became embarrassed in his private affairs, and made a temporary but honorable retreat, with a view to greater economy. In 1753, his tragedy of Boadicea was performed at Drury-lane theatre, with partial success. His Medea, imitated from Euripides and Seneca, in 1761, obtained greater attention. About this time, being chosen member of parliament for Weymouth, he was esteemed by the mercantile interest as an active and able supporter. He died in November, 1785, at the age of seventy-three. He left behind him another epic poem, forming a sequel to Leonidas, entitled the Athenaid, which was published in 1788, but attracted little attention.

Gloves, with respect to commerce, are distinguished into wash or tan leather, silk, thread, cotton, worsted, &c. Leathern gloves are made of the skin of the chamois,

kid, lamb, doe, elk, &c. The leather of gloves is not tanned, properly speaking, but cured with alum, which renders it soft and pliable, and easy for the hands. The Limerick gloves, likewise called *chicken gloves*, are made of leather, and are remarkably fine. These gloves are manufactured in the city of Ireland from which they derive their name, and whence they have, from time to time, been sent to most parts of Europe, the East Indies and America. The Limerick gloves are mostly worn by ladies. There is a good imitation made at Woodstock, Worcester, and some other parts of England. Large quantities of cotton gloves are manufactured at Nottingham and Leicester; and the greater part of the woollen gloves is made in Wales, Scotland and the north of England. An immense number of gloves are made in France: they are distinguished for neatness and elegance, as the English for durability. Danish lady's gloves are very famous.—We have reason to suppose that gloves were used by the Persians, as Xenophon, in the *Cyropædia*, mentions that on one occasion Cyrus went without them. The Greeks and Romans used them, but only for certain kinds of labor, as, for instance, in hedging. They were called *chirothecæ* and *manicæ*. *Manica* properly signifies the sleeve, which was sometimes united with a glove, or, more probably, was worn so long that it could be used as a mitten. During the middle ages, gloves were at first considered as a mark of dignity; archbishops, &c., wore them; knights also wore them in battle. Gloves play a conspicuous part in many national customs and usages, which originated in the age of chivalry. Throwing the glove down before a person, amounted to a challenge to single combat, which was accepted by the person, before whom it was thrown, picking up the glove and throwing down his own to be taken up by the challenger. This ceremony had the force of a mutual engagement to meet at an appointed time and place. The delivery of a glove was also a symbol of investiture. The council of Aix, in the reign of Louis le Débonnaire, prohibited, by an edict, the monks wearing any gloves but of sheep skin. But all the powers of the councils, popes and cardinals, could not accomplish this object, and glove-wearing by the monks and other ecclesiastics, is a subject of frequent complaint by ascetics. The council of Poictiers confined the use of "sandals, rings and gloves to bishops." At the coronation of the kings of France, the ceremony of blessing the glove was continued till lately, as is that of the champion throwing the glove in the ring at the coronation of the king of England. At the coronation of George II, an unknown gentleman took up the glove, as the champion of the pretender, accepting thereby the challenge of the champion in defence of the right of the house of Hanover to the throne. The judges in England used to be prohibited wearing gloves on the bench; and it was only in case of a maiden assize that the sheriffs were allowed to present a judge with a pair of gloves. It was an old English gambol to win a pair of gloves by kissing a lady, who was caught asleep or sitting on the table in company; and it was an ancient custom in France and Germany, to forfeit the gloves if a person entered the stables of a prince or peer, without previously pulling them off. These gloves were to be redeemed by a fee to the grooms. In Germany, the men that carry the bier at a funeral, receive a pair of gloves and a lemon; the clergyman also receives a pair of gloves at a wedding ceremony.

Glow-Worm. This is the female of one of the species of *lampyris*. The light is most frequently observable early in the summer, when the animal is in motion. It can be withdrawn or displayed, at pleasure, by contracting or unfolding the body. When crushed in the hand, this luminous substance adheres to it, and continues to shine till it dries. This extraordinary provision of nature is for the purpose of attracting the male. The glow-worm is apterous, or without wings. The male possesses elytra which cover wings longer than the body. The head and antennæ are black, the former concealed by the broad plate of the thorax. The four last rings of the abdomen, which emit the light, are not so bright in the male as in the female, and are nearly destitute of that luminous quality which renders her so remarkable.

Glucina, or Glucine; the name of a very rare earth, found only in three rare minerals, beryl or emerald, euclase and chrysoberyl. It is usually procured from the beryl, in which it exists in the proportion of fourteen per cent., combined with silex and alumine. The process for obtaining it pure, is as follows: The mineral is reduced to an exceedingly fine powder, mingled with three times its weight of carbonate of potash, and exposed to a strong heat for half an hour. The fused mass is then dissolved in dilute muriatic acid, and the solution evaporated to perfect dryness, by which means the silex is

rendered perfectly insoluble. The alumine and glucine are then redissolved in water, acidulated with muriatic acid, and thrown down together by pure ammonia. The precipitate, after being well washed, is macerated with a large excess of carbonate of ammonia, by which glucine is dissolved; and on boiling the filtered liquid, carbonate of glucine subsides, which, on being heated to redness, affords pure glucine. In this condition, it is white, tasteless, without odor, and quite insoluble in water. Specific gravity, 3. Vegetable colors are not affected by it. It is supposed, by analogy, to be the oxide of a metal, and its supposed metallic base is called *glucinum*. The salts which glucine forms with acids have a sweetish taste; hence its name from γλυκὺς, *sweet*.

Gluck (the chevalier Christopher). This musical composer, to whom the opera is indebted for its splendor and dramatic perfection, sprung from a respectable family in the palatinate of Bavaria, where he was born, in the village of Weissenwangen, on the Bohemian border, in the year 1714. His father was master of the chase to the prince Lobkowitz. From his earliest youth, he devoted himself to the study of music, and discovered talents of a high order; but it was not till after his fortieth year that he gave his immortal masterpieces to the world. Gluck studied the elements of music in Prague, was singer in a choir of that city, and soon became a skilful performer on several instruments. In 1738, he visited Italy, and studied composition under San Martini. His first opera, Artaxerxes, was written and performed in Milan, and another (Demetrius) in Venice, in 1742. A third (The Fall of the Giants), he composed for the Italian opera in London, whither he went in the year 1745. During his residence there, the society of doctor Arne and his wife, an excellent opera singer, had a great influence on the simplicity of his productions. This period was the most fruitful, in respect to the number of his works. In the space of eighteen years, he composed about forty-five operas; but none of these as yet exhibited that power and depth, which he was to unfold in his later efforts. Gluck had hitherto followed the then fashionable style and taste of the Italian opera. He was sensible of its defects, and felt how little his music, as a whole, could lay claim to real dramatic merit. The chief obstacle to the attainment of true dramatic perfection by the composer, was the empty and disconnected character of the poetry. It was not till accident made him acquainted with a man, who had the boldness and energy to strike out an independent path in the poetical department, that Gluck was enabled to do the same in the musical. This man was the Florentine Ranieri di Calsabigi, with whom Gluck became acquainted in Vienna, and who furnished him with a series of texts, in which the unity of the whole and the necessary connexion of the different parts, contrasted strongly with the loose, disconnected airs, duets and dialogues of former works, in which no attention had been paid to dramatic unity, but every thing was sacrificed to momentary effect, or to the vanity of a singer who was anxious to shine in particular scenes and airs, at the expense of the whole. The operas Alceste, Orpheus, and Helena and Paris, which Gluck composed in Vienna, between the years 1762 and 69, and which were there published, produced an overwhelming effect, by their boldness and originality, and served, together with the later ones, Armida and the two Iphigenias, to establish the fame of their author. Even in Italy, where the taste of the people had long been perverted, the severe and lofty muse of the German artist was received with enthusiasm, and the theatres of Rome, Parma, Naples, Milan and Venice, hastened to give his Helen and Orpheus. Alceste was not, at that time, attempted in Italy, as Gluck himself says, on account of the difficulty of the execution. So popular were these operas, that the theatre in Bologna alone took 900,000 lire (about 180,000 dollars) in one winter, and by one play (Orpheus). Still greater was the triumph of the later works, above mentioned. Durollet, who, during his residence in Vienna, had become acquainted with Gluck, undertook to convert Racine's Iphigenia into an opera, and offered his friend the text for composition, an offer which Gluck more readily accepted, as he was impressed with the idea that the French language was better adapted to the expression of strong, deep and manly feeling, even in music, than the Italian—an opinion which, as far as it regarded music, was directly contrary to Rousseau's, and which, notwithstanding the popularity of Gluck's music on the French stage, time has not confirmed. With a degree of care which he had never before given, Gluck now began his task. Instead of the two or three weeks which he had formerly occupied in the composition of an opera, a whole year was given to the completion of the masterpiece which he designed for Paris.

But here the German artist, met with almost insuperable obstacles, thrown in his way by national vanity and deep rooted prejudice. As soon as it was known that a work of his pen was to be offered to the great Parisian opera, the whole host of professional musicians and amateurs exclaimed against it; and he would never have attained his object, had not his former pupil and present patroness, the queen Maria Antoinette, commanded his piece to be received. In the beginning of the year 1774, Gluck himself, now sixty years old, arrived in Paris; and at length, on the 19th April, the long promised opera was represented for the first time. The house was filled to overflowing with spectators from all classes, and the impression which the whole produced was immense. At the very outset (a thing unparalleled in the musical annals of France), the overture was *encored*, and, with each part, the enthusiasm increased. In the two first years, this piece was performed 170 times. Soon after, the Orpheus, the words of which were translated into French, was brought upon the stage, and received with equal applause. Two other operas (*L'Arbre enchanté*, and *La Cythère assiégée*), which were performed in the following year, were unsuccessful. Not so, however, the celebrated Alceste; in which, as in the choruses of furies in Orpheus, the hearer seems to be surrounded with the horrors of Tartarus. Armida (in 1777) met with still greater applause; though formerly, when represented with Lully's effeminate music, it had not been popular. This great opera was repeated thirty times in succession, and the reputation which it procured its author was only exceeded by that of his two last great masterpieces, Iphigenia in Tauris (1779), and Echo and Narcissus. Two other operas (Roland and the Danaides) were not completed. Gluck threw the rough sketch of the former into the fire, having heard that his rival in music, Piccini, had undertaken to compose the same subject: and death prevented the completion of the latter. (It has since been finished, with tolerable success, by Salieri.) In 1787, Gluck returned to Germany, with a large fortune, and died in Vienna, on the 15th November, of the same year. We must here notice the contest that arose between the admirers of Gluck, whose compositions, by their high and finished style, produced a reformation in the music of France, and the followers of the old Italian and French school, at whose head stood Piccini, unquestionably a man of genius. All Paris took sides; and for a long time the Gluckists and Piccinists contended with the same bitterness, as did formerly the Jansenists and Jesuits, and, more lately, the Royalists and Jacobins. Gluck and Piccini themselves—to their honor be it said—shared this feeling but for a short time, and, in consequence of the mutual esteem which, notwithstanding the difference of their opinions, they could not but entertain for each other, had long become reconciled, while their blind disciples still maintained the warfare. It ought to be mentioned, that, in this musical contest, J. J. Rousseau, Arnaud and Suard sided with Gluck, and Laharpe and Marmontel with Piccini. It was natural that the victory should fall to those who attached themselves to the reformer. The essays which appeared on this occasion, under the names of the above mentioned authors, are preserved in an interesting collection, called *Mémoires pour servir à l'Histoire de la Révolution opérée dans la Musique par M. le Chevalier Gluck.* A year after Gluck's death, the marble bust of the great artist, made by Houdon, by subscription, was placed in the *foyer* of the opera house, by command of Louis XVI. In dramatic music, Gluck stands unrivalled in his art; and it is impossible to describe in words the depth and truth of expression which he knew how to give the most overpowering, as well as the gentlest scenes, without any of the vulgar embellishments of trills, cadences, &c. Contrary to the custom of most composers, Gluck strictly adhered to the genius of the language, and never allowed himself improperly to lengthen or shorten words, in favor of any particular passage. In the dedication of his Alceste to Leopold, grand-duke of Tuscany, his excellent views of dramatic music are beautifully and simply expressed. He introduced the trombone into the French orchestra, and the rare and judicious use of that instrument then served to heighten the effect of his great music pieces, as much as the ridiculous abuse of it at the present time, in many compositions, entirely destroys the grandeur of effect intended to be produced.

Gluckstadt; chief place of the duchy of Holstein, seat of the supreme court of the duchy, and of Lauenburg; about 16 leagues north-west of Hamburg, and 68½ south-west of Copenhagen. Lat. 53° 47′ 42″ N.; lon. 9° 27′ 10″ E. Population, 5176. The inhabitants are largely concerned in the Greenland whale fishery. The harbor is not commodious.

Glue, among artificers; a tenacious,

viscid matter, which serves as a cement. Glues are of different kinds, according to the various uses they are designed for, as the common glue, glove glue, parchment glue, isinglass glue, &c. The common or strong glue is made of the skins of animals; as oxen, cows, calves, sheep, &c.; and the older the creature is, the better is the glue made of its hide. Indeed, whole skins are rarely used for this purpose, but only the shavings, parings or scraps of them; or the feet, sinews, &c. Those who make glue of parings, first steep them two or three days in water; then wash them well out, boil them to the consistence of a thick jelly, which they pass, while hot, through osier baskets, to separate the impurities from it, and then let it stand some time, to purify it further; when all the filth has settled to the bottom of the vessel, they melt and boil it a second time. They next pour it into flat frames or moulds, whence it is taken out pretty hard and solid, and cut into square pieces or cakes. They afterwards dry it in the wind, in a sort of coarse net; and at last string it, to finish its drying. The best glue is that which is oldest; and the surest way to try its goodness, is, to lay a piece to steep three or four days, and if it swell considerably without melting, and when taken out resume its former dryness, it is excellent. A glue that will hold against fire or water, may be made thus: mix a handful of quick lime with four ounces of linseed oil, boil them to a good thickness, then spread the paste on tin plates in the shade, and it will become exceedingly hard, but may be dissolved over a fire, as glue. *Method of preparing and using glue.* —Set a quart of water on the fire, then put in about half a pound of good glue, and boil them gently together till the glue be entirely dissolved, and of a due consistence. When glue is to be used, it must be made thoroughly hot; after which, with a brush dipped in it, besmear the faces of the joints as quick as possible; then, clapping them together, slide or rub them lengthwise one upon another two or three times, to settle them close; and so let them stand till they are dry and firm. Parchment glue is made by boiling gently shreds of parchment in water, in the proportion of one pound of the former to six quarts of the latter, till it be reduced to one quart: the fluid is then strained from the dregs, and afterwards boiled to the consistence of glue. Isinglass glue is made in the same way: but this is improved by dissolving the isinglass in alcohol, by means of a gentle heat. (See *Cement.*)

Gluten; a vegetable compound, procured by repeatedly washing wheat flour in a large quantity of water, by which means the starch is dissolved, leaving the gluten behind in a very tenacious, ductile, somewhat elastic state, and possessed of a brownish gray color. It has scarcely any taste, and is insoluble in water, alcohol and ether, but is taken up by acids and alkalies. The acid solution is precipitated by an alkali, and, reciprocally, the alkaline solution by an acid. Dried by a gentle heat, it contracts its volume, and becomes hard and brittle. Its products with fire, or nitric acid, are nearly the same as those of gum and sugar. Gluten is present in most kinds of grain, such as wheat, barley, rye, oats, peas and beans; but the first contains it in far the largest proportion, which is the reason that wheaten bread is more nutritious than that made with other kinds of flour; for, of all vegetable substances, gluten appears to be the most nutritive. It is to the presence of gluten, that wheat flour owes its property of forming a tenacious paste with water, to which cause is due the formation of light spongy bread. The carbonic acid, which is disengaged during the fermentation of the dough, being detained by the viscid gluten, distends the whole mass, and thus produces the rising of the bread. Good wheat flour contains from 19 to 24 per cent. of gluten. The wheat of warm climates is richer in gluten than that of colder regions; to which cause may be attributed the difference between the wheat of the north and the south in the U. States. Gluten consists of two distinct principles; to one of which has been applied the name of *gliadine*, from γλια, gluten, and to the other that of *zymome*, from ζυμη, a ferment. To obtain these principles, the gluten is boiled repeatedly in alcohol, which dissolves the gliadine and leaves the zymome in a pure state. On mixing the powder of guaiacum with the latter substance, a beautiful blue color instantly appears; and the same phenomenon ensues, though less rapidly, when it is kneaded with gluten, or the flour of good wheat moistened with water. With bad flour, the gluten of which has suffered decomposition, the blue tint is scarcely visible. The intensity of the color thus produced is entirely dependent on the relative quantity of zymome contained in the flour; and, since the quantity of zymome is proportional to the quantity of gluten, the proportion of the latter, and therefore the quality of the flour, is tested by the action of the guaiacum.

GLUTTON (*gulo*). This genus of quadrupeds is distinguished by the head being but moderately elongated, and the body long in proportion to its height from the ground. The ears are rounded and very short. There is a simple fold of the skin below the tail, instead of the pouch observable in the badger, to which animal it bears some resemblance. It may, in fact, be considered as intermediate between the true plantigrade and digitigrade animals. Desmarest describes four species; one of which, the *G. arcticus*, or wolverene, is an inhabitant of the northern parts of this continent (*G. luscus*, Sabine). The wolverene is about 28 inches in length from the tip of the nose to the origin of the tail, which latter is about 8 inches, if the hair at the extremity be included, which is from 3 to 4 inches long. The whole body is covered with very long and thick hair, which varies in color according to the season or other circumstances. Its summer coat is generally as follows:—Face blackish as high as the eyebrows, and between these and the ears whitish or brownish; ears covered with coarse hairs; the lower jaw and the inside of the fore legs spotted with white; upper part of the back, thighs and under part of the belly, brown or brownish black; sides, chestnut color. This fur is of considerable value, and is much used in the northern parts of Asia, of which the wolverene is also a native, for making and ornamenting robes. The animal, however, does not breed in sufficient numbers to furnish any great collection to the fur traders. It is very voracious, but at the same time slow and heavy in its motions, though it is remarkably acute in its sight and hearing. It is amazingly powerful, and an overmatch for any animal of its own size. It makes a strong resistance when attacked. If it can lay hold of it, it will tear the stock from a gun, and pull the traps, in which it is caught, to pieces. It has been stated by persons who are familiar with its habits, that it will lurk on a tree, and drop on a deer passing underneath, and fasten on it, drinking the blood, till the unfortunate animal dies from exhaustion. It is one of the most destructive quadrupeds found in the northern part of this continent, destroying great numbers of young foxes, and other animals; it is also a great enemy to the beaver, watching them as they come out of their houses, or even breaking into their habitations. Among other fabulous accounts of this animal is that given by Olaus Magnus; that it eats so voraciously, that it is forced to go between two trees, in order to force out part of the food. The other species are the *G. vittatus*, a native of South America; extremely ferocious, and, although capable of being tamed, never losing its disposition to attack the smaller animals; *G. barbatus*, which is likewise a native of South America. This species lives in a burrow, and is easily tamed. It has a strong musky odor. *G. capensis*; a native of the cape of Good Hope. This species is very destructive to bees, destroying their nests for the sake of the honey and wax, of which it is very fond.

GLYPTIC (from γλυφω, I engrave); the art of engraving figures, &c., on stones and other hard substances. (See *Gem Sculpture*.)

GLYPTOTHECA; a building in Munich appropriated to the reception of the remains of ancient sculpture. It forms a square, enclosing a court. The works of art are distributed in ten rooms, which exhibit historically to the eye the growth of Greek art from Egyptian roots, its rise and progress in Rome, its decline and subsequent revival. There are, besides, three other rooms, appropriated to festivals connected with the arts. Among several hundreds of these works of art, in general but little known, we here see the remains of Æginetic art (q. v.); the sleeping faun; the colossal muse; Nero and the group of Isis, from the Barberini palace; the Pallas; the Leucothea; the *fauno colla macchia*, and the colossal Antinous, from the Albani palace; the Rondanini muse; the Gabinian Diana of Brasihi; the Pallas and Roma of Fesch, &c. The whole is perhaps the most appropriate building for its purpose in modern times. The saloons, devoted to meetings, have been painted in fresco by the celebrated Cornelius. (q. v.)

GMELIN; 1. John George, professor of botany and chemistry in Tübingen, where he was born in 1709, and where he studied until 1727. He then went to Petersburg, with his teachers, Bilfinger and Duvernoi, and in 1731 became professor of chemistry and natural history. In 1733, at the command and at the expense of the empress of Russia, he travelled to Siberia, in order to examine the country. From this laborious but highly instructive expedition he did not return until 1743. He died in 1755, at Tübingen, where he was then professor. He early became acquainted with natural history and chemistry, for the study of which latter science he had a good opportunity in the house of his father, who was a respectable apothe-

cary. His persevering efforts obtained him the reputation of being one of the greatest botanists of his time. His principal works are his *Flora Sibirica* and his Travels.—2. *Philip Frederic*, brother of the preceding, was born at Tübingen, in 1721. After his brother's death, he became professor of botany and chemistry at Tübingen, where he died in 1768. He wrote several botanical and medical works.—3. *Samuel Gottlieb*, a nephew of the preceding, was born in 1744, at Tübingen, where he studied physic, and, in 1763, took the degree of doctor of medicine. He afterwards visited Holland and France, and, in 1767, received an invitation to a professorship in the academy at Petersburg. The year following, by the command of the empress, he commenced, together with Pallas, Güldenstadt and Lepechin, a scientific tour through Russia. In 1769, he travelled along the western side of the Don, and passed the winter in Astrachan; in 1770 and 1771, examined the Persian provinces on the south and south-west side of the Caspian sea; in 1772, returned again to Astrachan, and there surveyed the regions on the Wolga, and, in 1773, the dangerous countries east of the Caspian sea. On his return, however, in 1774, he was imprisoned by the Khan of the Chaitaks, and died in confinement, July 27, of the dysentery. His widow received from the Russian empress 2000 rubles. His most important works are his *Historia Fucorum*, and his Travels in Russia (*Reisen durch Russland zu untersuchung der drei Naturreiche.*)—4. *William Frederic*, a distinguished engraver, was born at Badenweiler in the Brisgau, in 1745, and died at Rome, in 1821. His parents sent him to Basle. Here, guided only by his genius, he overcame numerous obstacles. In 1788, Gmelin went to Rome, and subsequently to Naples. At the close of 1790, he returned to Rome, and there actively engaged in painting from nature, for the most part in Indian ink. He did not diminish the effect by descending to minute detail, but knew how to seize upon the peculiar characteristics of every view, and his style evinces a deep study of nature. He also engraved a good deal. His engravings are among the finest productions of the art. In some of his later productions, indeed, a hardness and an exaggerated expression are perceptible. He cut his plates very deep, probably to enable him to take many impressions. Gmelin amassed a considerable fortune, as his engravings were in great demand.

Gnade (the German for *grace*); a word with which the names of many places founded by the Moravians begin; as *Gnadenberg*, in Silesia, with 460 inhabitants, one of the chief places of that fraternity; *Gnadenfeld*, a village also in Silesia; *Gnadenfrey*, also in Silesia, with 800 inhabitants, and a Moravian institution for education; *Gnadenhütten*, a Moravian village in Ohio; *Gnadenthal*, a colony of 1377 inhabitants, among the Hottentots; and many others.

Gnat (*culex*). These well known and troublesome insects are distinguished by having the body and feet very long and downy, antennæ garnished with hairs; large eyes; a proboscis composed of a membranous cylindrical tube, terminated by two lips, forming a little button, and sucker formed of five scaly filaments, producing the effect of a needle: the wings are placed horizontally over each other. They are but too well known in this country, particularly in the autumnal months, and more especially in marshy situations. Ever greedy of blood, they pursue us every where, enter our houses, especially in the evening, announcing their arrival by a sharp buzzing noise. When they bite, the sucker is plunged through the skin, and, as it buries itself, the sheath or trunk is drawn up towards the breast. The pain of the wound is occasioned by a venomous fluid which they inject into it; the best remedy for which is the preparations of ammonia. It is a curious fact, that it is only the females which thus torment us. One species of these insects is known under the name of *mosquitoes*, against whose attacks various means have been resorted to in different countries, as curtains of gauze, and various essential oils; the latter of which appear to be only partially successful. The Laplanders drive them off by means of smoke, and anointing their bodies with grease. These insects also feed on the juice of plants. The female deposits her eggs on the surface of the water, in a long mass. In their larva state, these animals are aquatic during the greater part of the summer. All stagnant waters are full of these small worms, hanging with their heads downwards, whilst their hinder parts reach the surface of the water. In this state the stigmata, or organs of respiration, are placed in the posterior part of the body: they are also, in this condition of existence, provided with small fins. After having remained in the larva state for about twenty days, they are tranformed into chrysalids, in which all the limbs of the perfect insect are distinguishable, through the

diaphanous robe with which they are then shrouded. After remaining three or four days wrapped up in this manner, they become gnats, and ascend into a new element. No sooner does the chrysalis reach the surface of the water, than the insect with its head bursts the shell, which then serves it for a boat, of which its wings are the sails. If in this critical moment a breeze arises, it proves a dreadful hurricane to these pigmy sailors; for it oversets the little bark, and the insect, not being yet disengaged from it, suffers a fatal shipwreck. If, however, the weather prove calm, the gnat makes a more prosperous voyage. Having time to dry his wings, before leaving the boat, he is enabled to mount into the air, where, contemptible as he may seem, he soon becomes the inveterate tormentor of the lords of the creation. (*Réaumur, Cuvier*, &c.)

Gneisenau, Neidhard, count of, and general field-marshal of Prussia, was born in 1760, at Schilda, while his mother, an officer's wife, was passing through that place. As his parents died when he was young, he received his education under the care of his grandmother, in Würtzburg. Having entered the Prussian service, the campaign of 1806 brought his talents into notice. In 1807, he distinguished himself by his valiant defence of Colberg, and was made colonel. After the peace of Tilsit, he was sent to England, as a secret agent of his court. He returned in 1810, and was for some time connected with the ministry. In 1813, he became major-general and quartermaster-general, and, in this capacity, he conducted the celebrated retreat from Lützen to Breslau, in so masterly a manner, that the pursuing foe lost 40 cannon without taking one from the allies. He was subsequently made chief of the general staff, and attached to field-marshal Blücher. The destruction of Macdonald's corps on the Katzbach, the passage of the Elbe, near Wartenburg, and the issue of the battle of Möchern, which made part of the great battle of Leipsic, October 16, were in a great measure the results of his plans. He was now created lieutenant-general. In 1814, he distinguished himself at Brienne, Paris and Montmirail. After the peace of Paris, he was made general of infantry, received the rank of count, with a grant from the crown lands to the amount of 8000 dollars yearly income. He rallied the broken Prussians at Ligny, in 1815, and his services at Waterloo were of the greatest importance. He pursued the enemy hotly to Paris, and took part in the negotiation of the peace. He was then made governor of the Rhenish provinces belonging to Prussia, and, in 1818, of Berlin. Gneisenau has since retired from this station to his estates. With the accurate knowledge which is necessary to the commander, Gneisenau combines a quick perception and a penetrating mind. He has evinced entire self-possession in the most difficult circumstances, and some of his most hastily formed plans bear the impress of precision, prudence and calmness. No one has ever seen him at a loss on the field of battle. With these military abilities, which bespeak the great commander, he unites an amiable modesty, and is distinguished for private virtues and social talents. Much of Blücher's success and reputation is owing to the constant aid of Gneisenau.

Gneiss; one of the three most ancient and most abundant rocks of our globe, of which granite and mica-slate are the other two. These are all destitute of organic remains, and constitute the foundation on which rocks of all the other classes are laid. They are composed of quartz, feldspar and mica, and possess a distinctly crystalline structure. They appear to pass by gradation into each other, and might, perhaps, with more propriety be regarded as modes of the same rock, than as different species. Gneiss received its name from the German miners, who applied it to a decomposed stone forming the sides of certain metallic veins; but Werner fixed the acceptation at present attached to the word, which is that of a schistose or slaty granite, abounding in mica. Granite frequently passes into gneiss by an almost imperceptible gradation: where the quantity of feldspar decreases, and the crystalline grains become smaller, if the mica increases in quantity, and is arranged in layers, the rock loses the massive structure, and becomes schistose;—this then is a true gneiss. When the mica becomes very abundant, and the other constituent parts are small in size and quantity, gneiss passes into mica-slate. Hornblende sometimes takes the place of mica in the composition of gneiss. When this is the case, the rock is called *hornblende gneiss*, or *gneissoid hornblende*. Gneiss is a rock much less prolific in disseminated minerals than either of the other primary rocks above mentioned. It occasionally, however, contains garnets interspersed through its strata. But the metallic veins and beds of other minerals which it presents are very remarkable. Thus gold is

found in it in Dauphiny, at the foot of Monte Rosa, silver, cobalt and antimony near Allemont, and lead and silver at Auvergne, Freyberg, and in Bohemia. The famous copper mines at Fahlun, in Sweden, occur in this rock. It contains iron ore in profusion also, as in the mines of Scandinavia, at Dannemora, Utoë and Arendal; and in the U. States, upon the borders of lake Champlain; at Franconia, in N. Hampshire, and in the northern parts of N. Jersey. Gneiss embraces also extensive deposits of white crystalline limestone and of serpentine, the beds of which are frequently so thick as to compose mountain masses. With regard to the distribution of gneiss, it may be remarked that it is the principal rock of very extensive districts. It forms the declivities of immense mountain chains of granite, and even constitutes entire mountains of itself. It is the predominating rock of Norway and of all the north of Europe. It abounds in the southern Alps and the Pyrenees, and forms the loftiest chains of the Andes of Quito. In the U. States, also, gneiss is a predominating rock, especially in New England and the eastern and southern parts of New York. The direction of its strata in these states is from the north-east to the south-west, with a dip to the north-west of from 50° to 80°. Gneiss is a rock much used in the U. States for the purposes of architecture, and is particularly esteemed in all our larger cities, as furnishing the best flag-stones. The well known quarries of Haddam (Conn.), and its vicinity, afford employment for several hundreds of men.

Gnome (*Greek*); a short, pithy saying, often expressed in figurative language, containing a reflection, a practical observation, or a maxim, common among the oldest Eastern nations. The Proverbs of Solomon, those of Jesus son of Sirach, and the Sermon on the Mount, are examples. Every nation preserves its first observations and discoveries, in the moral world, in short, pithy, striking sentences. The Samundian Edda has preserved excellent proverbs of Odin. Among the Greeks, Theognis, Phocylides and others, are called the *Gnomic poets*, from their sententious manner of writing. (See Brunck's *Gnomici Poetæ Græci.*) The Romans had many maxims of this kind from the elder Cato. Those of the Arabians were written in rhyme. The Hebrews are striking on account of their parallelisms. An energetic or enigmatical brevity is always a characteristic of the *gnome.*

Gnome. Modern mythology has given this name to the spirits which dwell in the interior of the earth, where they watch over hidden treasures. They assume a variety of forms, and are sometimes beautiful, and sometimes hateful. The last, however, is their appropriate form; but their females, *gnomides*, are originally beautiful. Among them all, Rübezahl, by means of Musäus' popular tales, has obtained the greatest celebrity in Germany. In Germany, Gnomes (spirits of the earth), Sylphs (spirits of the air), and Undines (spirits of water), are all comprehended, with the spirits of the woods, under the old name *Kobolde.* (q. v.) The native country of these poetical beings is the East, and they belong to the cabalistical phantasms. The Talmud informs us that a *Gnome*, in the form of a worm of the size of a barleycorn, was very useful to Solomon in the building of his temple, by splitting large masses of rock for him, and transforming them into smooth slabs without any assistance. Solomon had, indeed, employed many arts and much labor to obtain possession of it. These elves were introduced into Europe by the cultivation of the Pythagorean cabalistical philosophy, since the time of Raymund Lully, from the middle of the 15th to the beginning of the 16th century, by Pico of Mirandola, Marsilius Ficinus, Paracelsus, Cardanus and Reuchlin. The Gnomes make a part of Pope's machinery in the Rape of the Lock. (See Dobeneck's German Popular Superstitions in the Middle Ages—*Des deutschen Mittelalters Volksglaube*, 2 vols., Berlin, 1815.) (See also the article *Gabbalis.*)

Gnomon, in astronomy, is an instrument or apparatus for measuring the altitudes, declinations, &c., of the sun and stars. The gnomon is usually a pillar, or column, or pyramid, erected upon level ground, or a pavement. For making the more considerable observations, both the ancients and moderns have made great use of it, especially the former; and many have preferred it to the smaller quadrants, both as more accurate, and more easily made and applied. The most ancient observation of this kind extant, is that made by Pytheas, in the time of Alexander the Great, at Marseilles, where he found the height of the gnomon was in proportion to the meridian shadow at the summer solstice, as 213½ to 600; just the same as Gassendi found it to be, by an observation made at the same place, almost 2000 years after, viz., in the year 1636. This method of observation, however, is by no means accurate, as is prov-

ed by the following deficiencies in the ancient observations made in this manner: 1. The astronomers did not take into account the sun's parallax, which makes his apparent altitude less than it would be if the gnomon were placed at the centre of the earth. 2. They neglected refraction, by which the apparent height of the sun is somewhat increased. 3. They made their calculations as if the shadows were terminated by a ray coming from the sun's centre; whereas it is bounded by one coming from the upper edge of his limb. These errors, however, may be easily allowed for; and, when this has been done, the ancient observations are generally found to coincide nearly with those of the moderns.

Gnomon, in dialing, is the style-pin or cock of a dial, the shadow of which points out the hours. This is always supposed to represent the axis of the world, to which it is therefore parallel, or coincident, the two ends of it pointing straight to the north and south poles of the world. (See *Dial.*)

Gnomon, in geometry, is the space included between the lines forming two similar parallelograms, of which the smaller is inscribed within the larger, so as to have one angle in each common to both.

Gnomonics; the art of dialing, or of drawing sun and moon dials, &c., on any given plane, so called, as it shows how to find the hour of the day, &c., by the shadow of the gnomon or style.

Gnostics (*Greek*; γνωσις, knowledge). This name was assumed by a religious philosophical sect, which combined the phantastic notions of the Oriental systems of religion with the ideas of the Greek philosophers, and the doctrines of Christianity. There were sages, as early as the times of the apostles, who boasted of a deeper insight into the origin of the world, and of the evil in the world, than the human understanding, so long as it remains in equilibrium, can deem admissible, or even possible. Simon the magician, of whom Luke speaks in the Acts of the Apostles, was the first among them. Even in *his* dogmas, we discover the traces of ideas which were common to all the Gnostics; and they bear the unquestionable impression of an Oriental, particularly of a Persian and Chaldaic origin. They may be reduced to the following heads:—God, the highest intelligence, dwells in the plenitude of light, and is the source of all good; matter, the crude, chaotic mass of which all things were made, is, like God, eternal, and is the source of all evil. From these two principles, before time commenced, emanated beings, called *æons*, which are described as divine spirits. The world and the human race were created out of matter, by one æon, the demiurge, or, according to the later systems of the Gnostics, by several æons and angels. The æons made the bodies and the sensual soul of man (*sensorium*, ψυχη) of this matter; hence the origin of evil in man. God gave man the rational soul; hence the constant struggle of reason with sense. What are called gods by men (for instance, Jehovah, the God of the Jews), they say, are merely such æons or creators, under whose dominion man became more and more wicked and miserable. To destroy the power of these creators, and to free man from the power of matter, God sent the most exalted of all æons, to which character Simon first made pretensions. He was followed in these pretensions by Menander, a Samaritan, the most celebrated of his scholars, who, towards the end of the first century, founded a sect at Antioch and Syria. Simon and Menander were enemies to Christianity. Cerinthus, a Jew, of whom John the evangelist seems to have had some knowledge, combined these reveries with the doctrines of Christianity, and maintained, that the most elevated æon, sent by God for the salvation of man, was Christ, who had descended upon Jesus, a Jew, in the form of a dove, and, through him, revealed the doctrines of Christianity; but, before the crucifixion of Jesus, separated from him, and, at the resurrection of the dead, will again be united with him, and lay the foundation of a kingdom of the most perfect earthly felicity, to continue a thousand years. In the second century, during the reign of Adrian and both the Antonines, these principles were adopted by the Christian philosophers, who are more particularly known under the name of *Gnostics*, and still further refined, extended and systematized. Saturninus, a Syrian, speaks of an unknown supreme God, who had generated many angels and powers; seven of these æons were, according to him, creators of the world, and soon fell from God; one of them, the God of the Jews, had seduced man to him; whence originated the difference between good and bad men. Saturninus also calls Christ the Savior sent by God, and the Son of God; but the opinion that Christ was not actually born, and had not a real human body, but only an incorporeal image, is peculiar to him, on which

account, his followers and other later Gnostics, who agreed with him in this respect, were called *Docetæ* and *Phantasiasts*. Saturninus very consistently denied a resurrection of the body, and admitted only a return of the souls of good men into the being of the Godhead. His sect was distinguished by austerity of manners, by their abstinence from flesh, and by a rejection of matrimony. Basilides, his contemporary, an Alexandrian, was distinguished from him by the use of a language imitated from the Egyptian priests, though yet more mystic than theirs. According to him, the generations of several (celestial) degrees, each containing seven æons, and of which his kingdom of light consists, are emanations, and every inferior family or order of this kingdom is a copy of the higher. The internal harmony of the lowest order of this kingdom of light, was disturbed by the kingdom of darkness, which, perceiving its rays, endeavored to form a union with it. Pure natures were therefore drawn downwards into the dead mass, out of the former kingdom, and became engaged singly in purifying combats with matter. Hence arose the visible world, the object of which is the final separation of the good, and of those allied to the kingdom of light, from the material dross. The souls or natures fallen from light, pass for their purification, in this world, through different bodies and conditions, which Basilides proves from the different degrees of fortune and the different education of men. The highest point of this purification, however, was unknown to the most exalted æon of the lowest order, whom Basilides considers the creator of the world. Therefore, the first-born of the supreme original being united itself with the man Jesus on his baptism in Jordan, in order to redeem souls, that is, to elevate them above the worldly course to the highest order of the kingdom of light. His sufferings were but those of an innocent child, which shares the lot of human nature, and had no relation to his work. This is accomplished by the faith of the souls in Christianity, which Basilides calls an elevation of the soul, arrived to a consciousness of its destination, into the kingdom of light. Although this poetical view differed widely from the simplicity of the Christian religion, and betrayed the indulgence of a philosophizing fancy, still Basilides concurred in the Christian system of morals, and disapproved only of seeking a martyr's death. The mysterious coloring and the glitter of Basilides' theories procured him many followers. They often misunderstood him, however, and gave themselves up to many superstitious notions about abraxas stones and amulets. Isidore, his son, extended his sect, which, in the fourth century, entirely disappeared. The system of Carpocrates, an Alexandrian, who also flourished during the reign of Adrian, was distinguished from the one which we have just described, in this respect only, that he considered Christ as a mere man, whose purer and more powerful soul had more accurately remembered what it had seen with God, before its union with the body. The fathers of the church, Clement of Alexandria, Irenæus, Eusebius and Epiphanius, from whom, in general, we derive all our information concerning the Gnostics, accuse the moral system of Carpocrates of destroying all distinctions between good and evil, and inculcating an unlimited indulgence of the sensual appetites. Certain it is, that his followers practised the most detestable vices, and were the cause of many of the calumnies of the heathen writers concerning the Christians of this century. The most conspicuous of Carpocrates' scholars was Prodicus, who has, however, been erroneously called the founder of the sect of Adamites. (q. v.) The sect of Carpocratians, however, which, in Egypt and Italy, but especially in the islands, met with much success, became extinct as early as the beginning of the third century. The most complete and ingenious of all the Gnostic systems was founded in the second century, by Valentinus, a learned and eloquent Alexandrian. In that light or plenitude, which all the Gnostics make the residence of the Supreme God, he has placed 15 male and as many female æons, produced by successive intermarriages. The Supreme God, the Unbegotten, the Original Father, whom he also calls the *Deep* (Bathos), is the first of these æons; Thinking Silence was his wife, and Intelligence, a male, and Truth, a female, were their children. These produced The Word and Life; the latter a female, who gave birth to mankind and society. These eight constituted the first class of the 30 æons. The second class, of five couples, at the end of which stood the Only Begotten, and the third, of six couples, at the head of which stood the Comforter, were, in a similar manner, descended from mankind and society, and consisted, like the first, of personified ideas. The officers of this heavenly state are four male æons: Horus, who guards the boundaries of the re-

gion of light; Christ and the Holy Ghost, which instruct the other æons in their duties; and Jesus, whom all the æons of the kingdom of light begat in common, and endowed with their gifts, as all the inhabitants of Olympus did Pandora. Wisdom, the last female æon of the third class, envied Intelligence, on account of his knowledge, and, in the heat of her unrestrained passion, produced an unformed female æon, Achamoth or Enthymesis (Reflection, Consideration), which fell into the darkness of matter, and was endowed with a form by Christ out of compassion. Achamoth longed for the lost heavenly light. Fear, anguish, melancholy and laughter, alternately took possession of her. Her ungratified desire, at length, produced the soul of the world and other souls. From her tears originated the water; from her laughter, transparent matter; and from her sorrow, opaque matter. Christ was moved with compassion for this fallen creature, and sent her Jesus, who communicated to her knowledge, and delivered her from her pain. After this fortunate change, she bore three substances—a material, a spiritual, and a soul-like substance. Out of the last, the demiurgus, or the creator of the world, was formed, who, according to Basilides, made the heavens with their angels out of this soul-like substance, and selected the highest of these heavens for his own mansion; out of the material substance, under the influence of Achamoth's fear, beasts were made; under the influence of her melancholy, wicked spirits, whose prince is the lord of the world; and under the influence of her anguish, the elements of the world which contain fire. Man is formed out of all three substances. Christ, the Savior of men, when he appeared on the earth, had a visible body, made of finer material, and was composed of the spiritual and the soul-like substance only. At his baptism, the æon Jesus united itself with him, and instructed mankind. Valentinus describes the occurrences of his life, and his good deeds, like Saturninus, with the exception of one peculiarity. He says, that, when all the spiritual parts shall have been delivered from matter, Achamoth will unite herself with Jesus in the divine region of light; that she will draw the good souls to herself; that the heaven of the demiurgus will receive the most virtuous, and that the world will be consumed with fire. The Valentinian party, which rose towards the middle of the second century in Rome, and especially in Cyprus, and which was distinguished by its austere manners, was the most numerous of all the Gnostic sects, and continued until after the commencement of the fourth century. Marcion of Sinope, and Cerdo, a Syrian, renounced many of the absurdities of the earlier Gnostics, and formed a regular system, the characteristic of which was the rejection of the Old Testament. Marcion distinguished two supreme principles, God and the devil. The true God begat many spirits, among which were the creator of the world, the righteous God, and the lawgiver of the Jews. The last, through the prophets, promised Christ; but Jesus, who actually appeared, and is the true Redeemer, was the Son of the truly good God, and not the Jewish Messiah. This peculiar dogma of Marcion caused his separation from the Catholic church, in which Tertullian, in particular, successfully defended the honor of the Old Testament against him. The Marcionites were very numerous, and had, even to the beginning of the fifth century, many societies, and their own bishops, in Italy, Syria, Arabia and Egypt; and they maintained the reputation of blameless lives, while, according to the precept of their founder, in order to have as little as possible to do with matter, they avoided eating flesh, drinking wine, and matrimony. It is doubtful whether Marcion and Cerdo were also the founders of the sect which, towards the end of the second century, arose under the name of the *Ophites* (q. v.), and which, on account of the resemblance of their theogony to that of the Valentinians, were reckoned among the Gnostics. In the same period, Tatian, a Syrian, who had distinguished himself by his Harmony of the Four Gospels, and his discourses against the Greeks or heathens, adopted Gnostic doctrines, and founded a sect, the followers of which, after one of his pupils, were called *Severians;* on account of their austerity, *Encratitæ* or *Hydroparastatæ* (water-drinkers); and, because they renounced all property, *Apotactitæ*. Bardesanes, a Syrian, and Hermogenes, an African, who, in the reign of the emperor Commodus, apostatized from Christianity, and established sects, bordered, in their hypothesis concerning the origin of good and evil, upon Gnosticism. On the whole, when we take into consideration the philosophical tendency of that age, the passion for the marvellous, that had taken possession of the effeminate nations of the Roman empire, and the custom of pretending to a deeper insight into the secrets of nature and the divinity, it is not

to be wondered, that a religious philosophy, which adopted the most brilliant parts of Platonism, and which afforded nourishment alike to the imagination and to the vanity of secret wisdom, should have met with such universal success. By the austerity of its precepts, and its care for the well-being of the soul, it even prepossessed good men in its favor. The Gnostics were the Pietists of the third and fourth centuries. The Catholic church took occasion, from their heresy, to give greater precision to the articles of the orthodox faith. There have been no Gnostic sects since the fifth century; but many of the principles of their system of emanations re-appear in later philosophical systems, drawn from the same sources as theirs. Plato's lively representation had given to the idea of the Godhead something substantial, which the Gnostics transferred to their æons; and Leibnitz's effulgurations of God, Ploucquet's real presentations of God, saint Martin's pictures and mirrors, and the like, as well as the Gnostic æons, are a proof that the essays of the human understanding to explain the creation, and the origin of imperfect beings from the perfect, always end in similar results. The latest and most learned writings upon this subject are Lewald's and Neander's, particularly a work of the latter, entitled, *Genetische Entwickelung der vornehmsten gnostischen Systeme* (Berlin, 1818).

Gnu. This curious animal belongs to the genus *antelope*, and subgenus *boselaphus* (Blainville). It is called *gnu* by the Hottentots, and *wilde beest* by the Dutch. Though arranged by naturalists among the antelopes, it appears to form one of those intermediate links, which connect, as it were, the various tribes of animals in one harmonious whole. This animal resembles, in form, partly the horse, partly the buffalo, and partly the stag. It is as large as a middle sized horse. Its neck, though neither so long or slender as that of the horse, is more so than that of the buffalo, and is adorned with a stiff, erect mane. On the forehead, between the nose and flexures of the horns, the face is covered with an oblong tuft of stiff black hairs, turned upwards. Beneath the lower jaw is also a thick, shaggy beard. Its legs are long, and elegantly formed, like those of the stag; the space between the fore legs is covered with long, bushy hair. Its horns are rough, and are enlarged at their base, like those of the buffalo; they spring from the hinder part of the head, and, after bending forward beyond the eye, turn suddenly upwards. Both sexes are furnished with these appendages. In the young animal, they are perfectly straight, acquiring their flexure as the animal grows older. They are provided with lachrymal openings under the eyes. The gnu is a lively, capricious animal. It is affected by the sight of scarlet, like the buffalo or bull. When irritated, it expresses its resentment by plunging, curveting, tearing the ground with its hoofs, and butting with its head. When wounded, it is reported to be sometimes dangerous to the hunter. These animals feed in large herds, and it is only when stragglers have been accidentally separated from the herd, that any of them are found in a solitary state. Their flesh is very juicy, and more agreeable and nourishing than beef. When taken young, they are readily tamed; but the inhabitants of South Africa seldom attempt to domesticate them, as they are said to have a tendency to catch and communicate to the other cattle a dangerous infection. This animal is by no means common in our collections. There is at present a tolerably good one belonging to a travelling caravan of beasts, which has visited all our principal cities within a few years past.

Goa; a district of India, belonging to the Portuguese, in the province of Bejapoor, 40 miles long by 20 broad, situated on the western coast of India, between the 15th and 16th degrees of north latitude.

Goa; a city of India, and the capital of all the Portuguese settlements in that country. It is situated on an island of about 24 miles in circumference, at the mouth of the Mandova river. It in fact consists of two cities, the old and the new. The former is eight miles up the river, and, though almost deserted, contains many magnificent churches, and excellent specimens of architecture. The viceroy and principal inhabitants reside in the new city, which is at the mouth of the river, within the forts. It possesses two harbors, well defended by various castles and batteries, mounting very heavy cannon. It still carries on an inconsiderable trade with the mother country, with China and the coast of Africa; but its expenses far exceed its revenues. The inhabitants of the city and island are computed to amount to 20,000, but of these are very few genuine Portuguese. Lon. 73° 57′ E.; lat. 15° 30′ N. The island was called, formerly, *Tissuari*, and was inhabited by an Arabian tribe, when, in 1510, Albuquerque conquered the city, with the peninsulas Bardes and Salsette. Ever since

1559, it has been the residence of the Portuguese governor-general. The port is only open for the Portuguese flag. The air is unwholesome. The still existing edifices are silent witnesses of its former magnificence. The inquisition of Goa formerly had jurisdiction over all Christians in the Portuguese settlements; but, in 1815, its papers were burnt, and the inquisition abolished. The commerce is in the hands of Christians, the smaller trade in those of Jews and Banians. Since 1812, 24 large vessels annually carry the merchandise received there from the other Portuguese colonies, and from Canton, to Europe. The crown has the monopoly of sugar, snuff, pepper, saltpetre, pearls and sandal wood.

Goat (*capra*). This genus of quadrupeds is distinguished by the horns almost joining at the bases, and bending backwards; having eight cutting teeth in the lower, but none in the upper jaw, and generally a beard on the chin. Desmarest gives three species, of which there are numerous varieties. These are the *C. ibex*, the *C. caucasica*, and the *C. ægagrus* or domestic goat. The goat, even in a state of domestication, is vicious, subtle and lecherous. Like the wild species, it is amazingly swift and agile, climbing the most rugged mountains, and fearlessly browsing at the very edge of the steepest precipices. The female goes five months with young, and commonly brings forth one or two, but sometimes even three or four, at a birth. The kids are generally produced early in the spring. The buck has a rank, nauseous smell, which proceeds from his skin. Though fond of the summits of bleak and lofty mountains, the goat cannot bear extreme cold. The domestic goat is known in almost all parts of the globe. If we may judge from the expressions of the ancient pastoral poets, goats were formerly tended in Greece and Italy with no less care than sheep. The flesh is much esteemed by some nations, though it is far inferior to mutton. The milk is excellent, and has been thought peculiarly serviceable for consumptive persons. But the skin is the most valuable part of this animal. It is prepared for a variety of purposes, and takes a dye better than any other skin, and is well known under the name of *morocco*. The tallow of the goat is also an article of considerable importance. It is much purer and finer than that of the ox or sheep, and furnishes much whiter and better candles. The Cashmere goat, as its name indicates, is a native of the kingdom of Cashmere; it is smaller than the common domestic goat, and has long, silky, fine hair, not curled, as in the Angora goat. This variety has been successfully introduced into France, where it has bred with another variety, equally valuable, the Thibet goat. From these animals are procured the materials for the manufacture of Cashmere shawls. (See *Cashmere Goat.*) The Angora goat is also furnished with soft, silky hair, of a silver-white color, hanging down in curling locks eight or nine inches long. Its horns are in a spiral form, and extend laterally. It is remarkable, that not only the goat, but even the sheep and hare, of Angora, have longer and softer hair than the same animals in any other part of the world. From the wool of this goat, the finest camlets are made. Syria affords a peculiar variety of the goat, of which but little is known. The ears are usually between one and two feet in length, and are sometimes so troublesome to the animal, that the owners are obliged to trim them. This variety appears to have been known to Aristotle. There are several other varieties of the common goat, which it is needless to enumerate. We have a species in North America, which has given rise to much difference of opinion as to its proper place in a system of arrangement. Mr. Ord, who first described it, called it *ovis montana*. Blainville first termed it *rupicapra Americana*, and afterwards *antelope Americana;* whilst Hamilton Smith, although he retains the latter genus, bestows another specific name on it, viz., *lanigera ;* and, lastly, doctor Godman classes it as a goat, properly retaining the original specific name given it by Mr. Ord. The first notice of this animal was given by Lewis and Clarke, and it has since been noticed by major Long, doctor Richardson, &c. The Rocky mountain goat nearly equals in size a common sheep, and has a shaggy appearance, in consequence of the protrusion of the long hair beyond the wool, which is white and soft. Its horns are about five inches long, conical, somewhat curved backwards, and projecting but slightly beyond the wool of the head. In a communication, made by major Long, to the Philadelphia Agricultural Society, he states that it occurs in that part of the Rocky mountains which lie between 48° and 68° north latitude. They are in great numbers about the head waters of the Columbia, and furnish the principal part of the food of the natives of that district. They appear to be more numerous on the western than

on the eastern side of the mountains, and are rarely seen in the plains. They are easily obtained by the hunters. The skin is very thick and spongy, and is principally used in the making of moccasons. It is said the fleece of this goat is as fine as that inhabiting Cashmere.

Goatsucker (*caprimulgus*). This bird, whose congenera are so well known with us, under the names of *night-hawk*, *whip-poor-will* (q. v.), &c., is found on every part of the old continent, from Siberia to Africa. Like the owl, it is seldom seen in the day-time, unless disturbed, or in dark and gloomy days, when its eyes are not dazzled by the bright rays of the sun. As night insects are its food, namely, moths, gnats and beetles, it is peculiarly formed to enable it to catch them on the wing. For this purpose, nature has bestowed on it a mouth of great comparative size. When the animal flies, it is continually open, and has no need of being shut, to secure any insect, as it is surrounded on the inner side with a glutinous substance, that prevents their escape. This manner of flying with its mouth open, is the occasion of that whirring noise, which this bird makes while chasing its prey. It arises from the resistance made to the mouth by the air; and is more or less loud, according to the velocity with which the bird moves. When perched, it usually sits on a bare twig, with its head lower than its tail, and, in this attitude, utters a jarring note, whence one of its common names—*night-jar*. Sometimes it utters a weak, plaintive squeak, which it repeats four or five times in succession, which is probably its note of call to its mate. Buffon says, it does not perch like other birds, sitting across a branch, but lengthwise. It is solitary in its habits, and is generally seen alone. Mr. White supposes that its foot is useful in taking its prey, as he observed that it frequently puts forth its leg whilst on the wing, and seems to convey something to its mouth. These birds frequent moors and wild heathy tracts abounding in fern; they make no nest, but the female deposits her eggs on the ground; she lays two or three, which are of a dull white, spotted with brown. Montbeillard, who wrote this bird's history for Buffon, states, that it no sooner perceives its retreat to be discovered by an enemy, than it carefully rolls its eggs to a more secure situation. Its common name of goat-sucker, has no other foundation than ignorance and superstition. The colors of this bird, though plain, have a beautiful effect from the elegance of their disposition, consisting of black, white, brown, gray and ferruginous, disposed in the forms of bars, spots and streaks. The male is distinguished from the female by an oval white spot, near the end of the three first quill-feathers. It is about ten inches and a half in length, and weighs about two ounces.

Gobelin, Giles; a dyer of Paris, in the reign of Francis I. He lived in the *faux-bourg* St. Marceau (where his house, and the little stream that flows by it, still bear his name), and is said to have discovered the secret of dyeing that beautiful scarlet color which is called after him. The *Gobelin tapestries* derived their name from him. This manufacture, which was established by Colbert, in 1667, and placed under the direction of the painter Le Brun, is still one of the most celebrated in Paris. Its productions excel every thing of the kind in Europe. Many celebrated paintings of the old Italian, French and Spanish schools, have, in the most ingenious manner, been transferred to tapestry. The splendor of the colors and the delicacy of the execution are wonderful, and one can hardly conceive how it is possible, in tapestry, to imitate so nearly the appearance of oil colors. The establishment is carried on at the expense of government, and the pieces of tapestry are mostly bestowed as presents.

Goby (*gobius*, Lin.). These fish belong to the *acanthopterygiens* (Cuv.). They are marine, generally of a medium or small size, and mostly with a simple air bladder. They are distinguished by their ventral and thoracic fins being either united in their whole length, or at their bases. The spines of their dorsal fins are flexible; the openings of their ears, with four rays. Like the blenny, they can live for a long time out of water. There is much confusion in their arrangement. It appears to be a numerous genus, which has not been sufficiently elucidated. None of the species is much esteemed as food.

God, Truce of. (See *Truce*.)

God save the King; the burden and common appellation of a well known English national song. Concerning the author and the composer, opinions differ. It has been asserted that Henry Carey, who lived about the middle of the 18th century, was both, but, being ignorant of the rules of composition, employed doctor Thornton, of Bath, or, according to some, Christopher Smith, Handel's clerk, to correct his rough draught, and add the base. This story probably gave rise to the assertion, that Handel was the com-

poser. It appears to have been first published, together with the air, in the Gentleman's Magazine, in 1745, when the landing of the young Stuart called forth expressions of loyalty from the adherents of the reigning family. After doctor Arne, the composer of another national song (Rule Britannia), had brought it on the stage, it soon become very popular. Since that time, the harmony of the song has undoubtedly been improved, but the rhythm is the same as originally. According to a notice in the New Monthly Magazine, vol. iv, page 389, there is a copy of this national song, published without date, by Riley and Williams, in which Antony Young, organist in London, is called the author of the air. There is also a story, that this national song, as Burney, the author of the History of Music, maintained, was not made for a king George; but that, in the older versions, it ran thus, "God save great James our king;" and Burney adds, that it was originally written and set to music for the Catholic chapel of James II, and no one durst own or sing it, after the abdication of James, fearing to incur the penalty of treason, so that the song lay dormant 60 years, before it was revived for George II. It is very interesting to observe how this song, of which the words have no great merit, has become dear to the whole English nation, on account of the associations connected with it. The French Marseillaise hymn is of a much higher character, and equally a national favorite.

God-Father; a man who is sponsor for a child at baptism, who promises to answer for his future conduct, and that he shall follow a life of piety, thus obliging himself to instruct the child, and watch over his conduct. The relation is of high antiquity in the Christian church, and was probably intended to prevent children from being brought up in idolatry, in case the parents died before the children had arrived at years of discretion. In the Catholic church, the number of godfathers and god-mothers is reduced to two; in the church of England, to three; but formerly the number was not limited.

God-Mother; a woman who becomes sponsor for a child at its baptism. (See *God-Father.*)

Goderich, Frederic Robinson, lord viscount, premier of England for a short time after the death of Canning, entered parliament, in 1807, as member for Ripon, and continued to sit in the house of commons till he was raised to the peerage. He was never distinguished for very brilliant powers. He spoke seldom, but with vigor, knowledge, and good sense. His speeches were perspicuous, logical and animated. He was brought forward, in 1812, by receiving the appointment of vice-president of the board of trade. His introduction of the corn bill, in 1815, was attended with some disturbance, during which his house was mobbed and pillaged. He was appointed chancellor of the exchequer in 1823, and, in 1824, proposed reductions in the duties on wine and spirits, wool and silk, and the assessed articles in general. In the following year, he exposed himself to much ridicule by his boasts of the success of his operations, and vainly predicted a surplus revenue. On the elevation of Canning to the premiership (1827), Mr. Robinson was made secretary of the colonies, and raised to the peerage, and thus had the difficult task of defending the new ministry in the house of lords. The death of Mr. Canning, in August of the same year, placed lord Goderich at the head of the cabinet, with the post of first lord of the treasury. But lord Goderich felt himself unable to stand against the powerful opposition, and, in Dec., 1827, requested permission to retire, but was induced to remain in power, until new arrangements could be made. Jan. 8, 1828, the cabinet was declared to be dissolved, and the duke of Wellington became premier, as first lord of the treasury. Nov. 16, 1830, the duke resigned his office, earl Grey (q. v.) became premier, and lord Goderich secretary of the colonial department.

Godfrey of Bouillon, born about the middle of the 11th century, at Bezy, in the Walloon Brabant, near Nivelle, was the son of Eustace II, count of Boulogne and Lens. In 1076, he succeeded his uncle, Godfrey the Hunchbacked, duke of Lower Lorraine, in the duchy of Bouillon. He served faithfully and valiantly, under the emperor Henry IV, in Germany and Italy. That prince was indebted principally to him for the victory over Rodolph, duke of Suabia; and he displayed heroic courage at the siege of Rome. The fame of his exploits procured him, in 1095, his election as one of the principal commanders of the crusade. (See *Crusades.*) Early in the year 1096, he commenced his march, in company with his brothers, Eustace and Baldwin. He forced the emperor Alexis Comnenus to allow him a free passage to the East. He promised the emperor to resign to him the territory which he should conquer from the infi-

dels, on condition of his supplying the army with provisions. But Alexis, dissatisfied that the crusaders plundered the environs of Constantinople, did not adhere to his stipulations. Godfrey took Nice, and, in 1098, Antioch. In this last city, the crusaders were, not long after, themselves besieged. Being destitute of provisions, they were reduced to extreme necessity. While they were in this state, a Provençal priest, pretending that he had been favored with a revelation, instructed them where to find the holy lance, which was accordingly discovered. This circumstance inspired the crusaders with such courage, that they repulsed the Turks, and gained a splendid victory. In the following year, July 19, Godfrey took Jerusalem itself, after a five weeks' siege. The infidels were indiscriminately massacred, notwithstanding the endeavors of Godfrey, whose mildness was equal to his bravery, to put a stop to the slaughter. Eight days after the capture of Jerusalem, the leaders of the army elected him king of the city and the territory; but the pious Godfrey would not wear a crown in the place where Christ was crowned with thorns; and he declined the kingly title, contenting himself with that of *duke*, and *guardian of the holy sepulchre*. The sultan of Egypt having learned, that of the 300,000 Christians, who had assisted in the capture of Antioch, only 20,000 now survived, raised an army of 400,000 men, for the purpose of expelling them from their new conquests. Godfrey gave him battle in the plain of Ascalon, on which occasion 100,000 men were left dead upon the field. This victory placed him in possession of the whole Holy Land, two or three places only excepted. Godfrey now turned his attention to the organization of his newly established government. He appointed a patriarch, founded two cathedral chapters, and built a monastery in the valley of Jehoshaphat. He subsequently gave his new subjects a code of laws, but soon after died, July 18, 1100, just a year after the capture of Jerusalem. He was interred on mount Calvary, near the sepulchre of the Savior. Tasso's beautiful epic poem sets the character of this great prince and general, whom history has handed down to us as a pattern of piety, bravery, and all princely virtues, in a just light.

Godfrey of Strasburg, one of the most distinguished of the old German poets, was probably born in Strasburg, but at any rate lived there. He was not, like most of the *Minnesingers* (minstrels) of his age, a noble. He lived in the most flourishing period of the German chivalric poetry, at the end of the 12th century and beginning of the 13th. Besides many lays in the collection of Manesse, we are indebted to him for the great chivalric poem, *Tristan und Isolde*, derived from the legends of the round table, from a Welsh original, but possessing as much originality of character as any other German classical work. For grace, loveliness, and vivacity of description, richness of coloring, and melody of versification, the work of Godfrey stands alone in old German literature, and a soft and almost elegiac strain of sentiment pervades his poetry. The best edition is that of F. H. von der Hagen (with the continuations of Ulric of Turheim, and Henry of Friburg, &c.), at Breslau, 1823, in two volumes.

Godfrey, Thomas, the inventor of the quadrant commonly called *Hadley's*, was born, and pursued the trade of a glazier, in Philadelphia. Having accidentally met with a mathematical book, he became so delighted with the study, that, by his own unaided industry, he soon made himself master of the treatise, and of every other English work of the kind that he could procure, and afterwards acquired a tolerable proficiency in Latin, in order to be able to peruse the mathematical works in that language. Anxious to read sir Isaac Newton's *Principia*, he went to James Logan, secretary of the commonwealth, who then enjoyed a great reputation as a mathematician, and requested him to lend him the work. Mr. Logan had never seen or heard of Godfrey before, but, after some conversation, bade him welcome to that or any other book he possessed. Not long afterwards (in 1730), Godfrey communicated to Logan the improvement he had made in Davis's quadrant, by which Logan was so much struck, that, in May, 1732, he addressed a letter, on the subject, to doctor Edmund Halley, in England, in which he described fully the construction and uses of Godfrey's instrument. In the same year, Godfrey himself also prepared an account of his invention, addressed to the royal society of London; but it was not then transmitted, from the expectation which he entertained of the effect of the letter to Halley. No notice, however, was taken of it by that *savant*, and, after an interval of a year and a half, Logan resolved to have the matter submitted immediately to the royal society. For this purpose, he transmitted a copy of the letter, together with the paper of Godfrey,

to Mr. Peter Collinson, an eminent botanist and member of the society, engaging him to lay them before that body. This was accordingly done; but Mr. Hadley, the vice-president of the society, had already presented them a paper, dated May 13, 1731, containing a full description and *rationale* of a reflecting quadrant of the same character, which he claimed as his invention, and the paper was inserted in the volume of the Philosophical Transactions for that year. Thus there were two claimants to the invention of the instrument; but it was decided that they both were entitled to the honor of it, and the society sent to Godfrey, as a reward, household furniture to the value of £200, instead of money, on account of his habits of intemperance. The instrument has gone by the name of *Hadley's*, but it should rather be called *Godfrey's*, for the American may certainly be deemed its first discoverer, although the idea of it may have also been original in the mind of Hadley. Time enough, however, intervened between the period of Godfrey's discovery and that of the presentation of Hadley's paper to the royal society, for the latter to have received some account of the instrument. Mr. Godfrey died in December, 1749. Doctor Franklin says of him, "Among the first members of our junto was Thomas Godfrey, a self-taught mathematician, great in his way, and afterwards inventor of what is now called *Hadley's quadrant*. But he knew little out of his way, and was not a pleasing companion, as, like most great mathematicians I have met with, he expected universal precision in every thing said, and was forever denying or distinguishing upon trifles, to the disturbance of all conversation. I continued to board with Godfrey, who lived in part of my house, with his wife and children, and had one side of the shop for his glazier's business, though he worked little, being always absorbed in mathematics."

Godfrey, Thomas, junior, the son of the foregoing, and a poet of some merit, was born in Philadelphia, in 1736. Disliking the drudgery of a mechanical occupation, he abandoned the trade of his father, as well as the art of watchmaking, to which he had been apprenticed, and obtained a lieutenancy in the provincial troops raised, in 1758, for an expedition against fort Du Quesne. This station he retained until the forces were disbanded. He then established himself as a factor in North Carolina, where he died, three years afterwards, August 3, 1763, in the 27th year of his age, in consequence of violent exercise on a very warm day. Little attention was paid to Mr. Godfrey's education, but he was ever ardent in the pursuit of knowledge, and became exceedingly well versed in the works of the English poets. His own poetical talents were early manifested by his publications in the American Magazine, printed in Philadelphia. His principal poem is the Court of Fancy; and, among his minor pieces, his Epistle from Fort Henry may be cited with eulogy. Some of his pastorals and elegies possess also a degree of beauty. But he is principally distinguished as the author of the first American drama. This production is called *The Prince of Parthia*, a tragedy, which, with various defects, has some redeeming merits. After his death, his poems were collected, and, in 1765, were published in Philadelphia, preceded by a critical review of them, by doctor Smith, and a biography of the author, by his friend Nathaniel Evans.

Godfrey, sir Edmundbury; a magistrate who was active in the discovery of the popish plot. He was soon after found dead, pierced with his own sword. His death was imputed to the resentment of the papists, and therefore his remains were buried with great pomp. He died October 17, 1678.

Godiva. (See *Coventry*.)

Godman, doctor John D., an eminent American lecturer and writer, was born at Annapolis, in Maryland, and, having lost his parents at an early age, was bound apprentice to a printer in Baltimore. Disliking his business, he abandoned it after a few years, and, in the autumn of 1813, entered as a sailor boy, on board the flotilla stationed in Chesapeake bay. At the end of the war, when about 15, he commenced the study of medicine. He then removed to Baltimore, where he prosecuted his studies with such success, in the office of an eminent physician, that he was chosen to fill the place of his preceptor, who was professor of anatomy in the university of Maryland, whilst the latter was disabled by sickness from attending to his duties. His lectures gave so much pleasure to those who heard him, that strong symptoms of regret were manifested when he was obliged to relinquish the station. He afterwards was induced to remove to Cincinnati, on the Ohio, by an offer of the chair of anatomy, in a medical school which was about to be established in that town. But as the school did not succeed, he returned, after a year, and settled in Philadelphia, as a physician and private

teacher of anatomy, and, for some time, assisted in editing doctor Chapman's Medical Journal. It was about this time that he published his popular Natural History of American Quadrupeds, in three volumes octavo. Having been solicited to accept the professorship of anatomy in Rutgers' Medical College, at New York, he removed thither; and at last his affairs assumed a prosperous aspect. He acquired an extensive practice as a surgeon, and the college flourished; but in the midst of his second course of lectures, a severe cold settled on his lungs, accompanied by a copious hemorrhage, which obliged him to relinquish his pursuits. After having visited Santa Cruz, without permanent benefit to his health, he removed, in 1829, to Philadelphia, where he died, April 17, 1830, in the 32d year of his age. Though doctor Godman's early education had been greatly neglected, yet, by his indefatigable industry, he made himself master of Latin, French and German, besides acquiring a considerable knowledge of Greek, Italian and Spanish. His learning, as a physician and naturalist, was very extensive, and there were few subjects of general literature in which he was not well versed. Among other pursuits, to which he turned his attention, was the study of ancient coins, of which he acquired a critical knowledge. Natural history, however, was his favorite pursuit, and it is as a naturalist that he has left behind him the greatest reputation. His American Natural History, and his Rambles of a Naturalist, are works of high merit. As a teacher of anatomy, he was excelled by none. Doctor Godman possessed a retentive memory, unwearied industry, great quickness of perception, and remarkable power of concentrating all the energies of his mind upon any given subject. He was of an enthusiastic temperament, and his thirst for knowledge was never satisfied. Some of his poetical effusions indicate a chaste and vivid imagination. His social and moral qualities were as worthy of eulogy as his intellectual, and he died a sincere and ardent Christian. His countenance was remarkably fine. The articles on natural history, in this work, to the end of the letter C, were communicated by him.

Godolphin, Sidney, earl of Godolphin, began a career of politics at an early age, under Charles II, and was one of those who voted for the exclusion of the duke of York from the throne, in 1680, notwithstanding which, he continued in office after the accession of James II. On the flight of that monarch, and while the country was yet in suspense, Godolphin voted for a regency, yet was, after the settlement of the crown on William and Mary, made a treasury commissioner. During the reign of Anne, he was appointed lord high treasurer of England, and, in 1704, became a knight companion of the garter. In 1706, he was made earl of Godolphin, and, four years afterwards, was obliged to retire from office. His death took place in 1712.

Godoy, don Manuel de; duke of Alcudia, prince of peace (*principe della paz*), favorite of king Charles IV of Spain; born 1764, at Badajoz. When young, he was only a poor nobleman, who sang well, played on the guitar, and was distinguished by a tall, handsome figure. He accompanied his elder brother, don Luis Godoy, to Madrid, and soon entered the body guard of the king. The master of an ordinary entertained him for a year, and received his payment for his board and lodging in singing and playing. The same accomplishments gained his brother the acquaintance of an attendant of the queen, who recommended him to her mistress. The queen learned from him, that his brother sang and played still better, and don Manuel was summoned to her presence. The king also heard him, and was delighted with the style of his performance. Godoy now became a favorite at court. Here his handsome person, easy and agreeable conversation, together with his rare talent for intrigue, procured him, in quick succession, the following posts. In 1788, he was an adjutant; in 1791, adjutant-general of the body guard, and grand cross of the order of Charles III; in 1792, lieutenant-general, duke of Alcudia, major of the body guard, premier in the place of Aranda, and knight of the order of the golden fleece; lastly, in 1795, as a reward for his pretended services in making peace with France, he was created prince of peace (*principe della paz*), and grandee of the first class, and presented with an estate that gave him an income of 50,000 dollars. He signed, August 19, 1796, at St. Ildefonso, an alliance, defensive and offensive, with the French republic. He married, in September, 1797, donna Maria Theresia of Bourbon, a daughter of the infant don Luis, brother of king Charles III. In 1798, he resigned his post of prime minister, but was, in the same year, appointed general-in-chief of the Spanish forces. He commanded, in 1801, the army sent against Portugal, and signed the treaty of

Badajoz, by which he obtained, according to a previous secret stipulation, one half of the 30,000,000 of francs, to be paid by the prince of Brazil. By a decree of October 1, 1804, he was made generalissimo of the Spanish military and naval force, kept a body guard of 120 men, and his income was increased by the addition of 100,000 piastres. A new decree, in 1807, bestowed on him the title of *highness*, and unlimited power over the whole monarchy. It was not long, however, before he fell from his proud elevation, through the influence of various causes, partly foreign and partly domestic. The power of Napoleon had raised his suspicion; and, in 1806, a short time before the war with Prussia, he thought the time had arrived to break the might of France. He called the nation to arms; and, although he did not avow the object of his preparations, and, after the unfortunate turn of the war with Prussia, pretended to have been providing against danger from the Barbary states, yet Napoleon had seen through his design, and, from that moment, determined to dethrone the Bourbons in Spain. (See *Spain since* 1808.) In the meantime, the hatred of the people against the overbearing favorite was excited to the highest degree. Godoy saw, too late, the abyss open before his feet. The insurrection of Aranjuez (March 18, 1808) baffled his plan of fleeing to America with the royal family. To escape the fury of the populace, the prince of peace concealed himself in a loft of his house, but was discovered, roughly handled, and would have lost his life, if the prince of Asturias had not exerted himself to save him, at the instance of the king and queen, on condition that he should be tried. The important occurrences at Bayonne, however, intervened. Napoleon, who wished to employ the influence of the prince of peace with Charles IV, procured his release from prison, and summoned him to Bayonne, where he arrived April 26, 1808, and became the moving spring of every thing done by the king and the queen of Spain. Since that time, he has lived in France, and, still later, in Rome, where he enjoyed the favor of the king and queen, until the death of both (January, 1819). When he was sick, in 1818, the queen herself nursed him. Though he has lost his property in Spain, his income was, in 1818, estimated at 5,000,000 of piastres. He possessed the richest collection of paintings in all Spain. His house was the most splendid and elegant. He has a daughter, the duchess of Alcudia, by his wife, who has remained in Toledo, with her mother, a descendant of the family of Sallabriga. The character of this man has been represented as worse than it really is, through the hatred of the Spaniards. The following is one of the many anecdotes told of him. An old officer, of the name of Tudo, sought, for more than six months, to obtain an audience of the prince. At last he asked for it through his daughter. Immediately both were admitted, and the father received the place of governor, in Buen-Retiro, whither the prince frequently went to visit the daughter, Josephine Tudo. She captivated him so much, that he is said to have married her secretly. The queen herself, according to the story, knew of it; but no one dared to say any thing, in the presence of the king, to disparage the prince. His enemies, acquainted with the fact, urged the marriage of the prince with the daughter of the infant don Luis, then 15 years old. Josephine, according to report, heard of the nuptials only the evening before they took place. She ran into the palace, and entered the apartment of the prince, exclaiming, "He is my husband, the father of my children! I call upon God and man for justice!" Godoy fled through the garden. The unfortunate woman swooned, and was carried back to her own house. After a few days, however, a reconciliation took place, and the prince persuaded her, that he had been obliged to obey the orders of the king. The prince is said to have two sons also by a lady, who, through his influence, was made countess of Castello Fiel. Godoy, during the period of his power, frequently opposed the influence of the clergy, and endeavored to carry into execution several good plans; for instance, the establishment of schools on the system of Pestalozzi. He set several prisoners of the inquisition at liberty, and destroyed the minutes of their trials. He is now living in Rome. He blames nobody, and is silent about his enemies. He is only heard to repeat, that he has not shed blood. The pope lately prevailed on him to exchange the title of *prince of peace* for that of *prince of Vaccano*, the former being disagreeable to the king of Spain. His brother, don Luis, died, in 1801, captain-general of Estremadura.

Godwin, Mary, better known by her maiden name of *Wolstonecraft*, a writer of considerable, but eccentric genius, was born in or near London, in 1759. Her parents, whose circumstances were hum-

ble, afterwards removed to a farm near Beverley, in Yorkshire, where she attended a day school. In her 24th year, she set up a school, in conjunction with her sisters, with whom she removed to Newington-Green, and wrote a pamphlet, entitled Thoughts on the Education of Daughters. She was subsequently employed, for some time, as governess in the family of an Irish nobleman; after which she produced Mary, a Fiction; Original Letters from Real Life, and the Female Reader. She was one of the first to answer Burke's Reflections on the French Revolution, which answer was followed by her celebrated Vindication of the Rights of Women. The eccentricity of her theory was equalled by the singularity of her practice, which led her first into the indulgence of a romantic, but fruitless attachment to Mr. Fuseli, the painter, although a married man, and to one more intimate with an American, of the name of Imlay, whose desertion caused her to attempt suicide. This ardent passion, like the former, was, however, overcome by a succeeding one, the object of which was Mr. Godwin, author of Political Justice, &c. As the bonds of wedlock were deemed a species of slavery in her theory, it was only to legitimatize the forthcoming fruits of the union, that a marriage between the parties took place. She died in childbed, after being delivered of a daughter, in August, 1797. Mr. Godwin published her life. The history of this woman, of strong but undisciplined powers and passions, does little to advance the credit of the theory on which she acted. Besides the works above mentioned, Mrs. Godwin published a Moral and Historical View of the French Revolution, and Letters from Norway.

Godwin, William, son of a dissenting minister, in England, was himself destined for the same profession; studied at the dissenting college at Hoxton, near London, where he was five years under the tuition of doctor Rees and doctor Kippis. He entered the dissenting church, in 1778, and preached near London, whence he removed to take charge of a congregation at Stowmarket, in Suffolk. He adopted the opinions of Calvin. In 1782, he removed to London, resolving to trust to literature for a subsistence. His first publication was Sketches of History, in six Sermons (1784). He is said to have had the conducting of the New Annual Register. A sketch, which he wrote for the Register, he enlarged, and published under the title of The Political Events of the United Provinces—a work of considerable merit. Mr. Godwin was, in 1782, a strictly orthodox dissenting divine; but, in 1792, we find him appear as the author of Political Justice, in which he inculcated some doctrines, both on religion and politics, which gave great offence. This work placed him at the head of a new sect, which was, however, not very numerous, nor did it last long. Indeed, Mr. Godwin himself helped much to destroy it, by recanting, in a second edition, many of his first principles. In 1794, his novel of Caleb Williams came from the press—a work of very considerable merit, but open to many objections. In 1796, he published a volume of miscellaneous essays, under the title of the Inquirer. Both his great works soon reached a third edition. Mr. Godwin, in his Political Justice, had spoken much against the marriage state; but, in 1797, he became the husband of the celebrated Mary Woolstonecraft. (*See the preceding article.*) She died soon after the marriage, and he published her memoirs—a work which exposed the lady and her biographer to much censure. In 1799, he published St. Leon, a Tale of the Sixteenth Century, 4 vols., 12mo. In 1801, he brought on the stage Antonio, a tragedy; but it did not succeed. In 1807, his Falkener, a tragedy, had no better success. In 1801, he published Thoughts on Doctor Parr's Spital Sermon, being a Reply to the Attacks of Doctor Parr, Mr. Mackintosh and others. In 1803, appeared his History of the Life and Age of Geoffrey Chaucer, 2 vols., 4to. In this work, Mr. Godwin has borrowed much from Stowe's Survey of London, but has contrived to give us a most entertaining account of the manners and customs of Chaucer's age. After the loss of his first wife, he married again. He has written many books for the instruction of children, under the name of *Edward Baldwin, esquire.* His other acknowledged works are, Fleetwood, or the new Man of Feeling, a novel (1805); an Essay on Sepulchres (1809); the Lives of Edward and John Phillips (1815); Letter of Verax, on the assumed Grounds of the Present War (1815); Mandeville, a Tale of the Seventeenth Century (1817); an attack on Mr. Malthus's Theory of Population, and a History of the Commonwealth (4 vols., 8vo., London, 1824—28).

Gœckingk, Leopold Frederic Günther, von, was born at Grüningen, in the territory of Halberstädt, in 1748. He studied law at the university in Halle, and

there, in conjunction with his friend and countryman G. A. Bürger, tried his powers in the art of poetry. He afterwards filled several important stations in the Prussian service. He wrote songs, epigrams and epistles, the last of which, especially, were received with universal approbation. Besides many other poems, which evince deep feeling, and a great command of language, his Songs of Two Lovers (*Lieder zweier Liebenden*), first published in 1777, and again in 1779, procured him the greatest reputation. His poems were published at Frankfort (1780—1782), in three volumes. A new edition, in four volumes (enlarged with satirical essays), appeared in 1818. His prose writings were published at that place, in one volume, in 1784. Gőckingk died February 18, 1828.

Gœrres, John Joseph, the son of a trader, was born at Coblentz, January 25, 1776, and received his education at the academical gymnasium of his native city. Before he was 20 years of age, he exhibited his oratorical powers in clubs and public meetings. As Coblentz was the chief place of resort for the emigrants, from 1789 to 1792, and was much affected by the influence of the French revolution, Gőrres published a journal, which, on account of its impartiality, obtained general esteem. To put an end to the despotism of the French officers, and remove the uncertainty which prevailed with respect to the political destiny of the countries on the Rhine, the patriotic party, on its left banks, resolved to petition for the union of these provinces with France. In November, 1799, Gőrres was sent to Paris, at the head of a deputation; but, as the revolution of the 18th of Brumaire had commenced, they could not be even admitted to an audience of the first consul. Gőrres, therefore, obtained their recall, and, in a small pamphlet, entitled The Result of my Mission to Paris (*Resultate meiner Sendung nach Paris*), gave a faithful account of it to his fellow citizens. Public life had now become disagreeable to him, and he accepted the situation of a teacher of natural history and physics in Coblentz. Natural philosophy was his favorite study. During this period, he produced his Aphorisms concerning Organology (*Aphorismen über Organologie*, 1802), Organology (1805), and Faith and Knowledge (*Glaube und Wissen*, 1806). In 1806, Gőrres went to Heidelberg, where his interesting and animated elocution procured him many hearers. While in Heidelberg, he studied the Persian language, his knowledge of which is displayed in his Mythological History of the Asiatic World (*Mythengeschichte der Asiatischen Welt*), and his Book of the Heroes of Iran (*Heldenbuch des Iran*). In 1807 appeared his *Deutschen Volksbücher*. The turn which the war in Russia took, revived the hopes of Gőrres. A periodical publication, for the purpose of arousing the Germans, especially in the countries on the Rhine, which had for many years been attached to France, appeared important. In February, 1814, therefore, appeared the Mercury of the Rhine—such a paper as had never before been seen in Germany. Its strong and peculiar language, its patriotic sentiments, its clear elucidation of the most weighty questions relating to the politics of the day and the history of the times, exerted such a decided influence upon public opinion, that even the French called the Mercury "*la cinquième puissance*" (the fifth power), and the English papers gave almost an entire translation of every number. This paper was prohibited in February, 1816. At this time, Gőrres went again, with his family, to Heidelberg, in order to avail himself of the treasures of former times, which had been brought from Rome. At a later date, he removed to Coblentz, and, during the scarcity of 1817, was very active at the head of an association of citizens. Gőrres had already rendered himself obnoxious, by drawing up a petition, expressive of the wishes of the provinces on the Rhine belonging to Prussia, in the name of the city of Coblentz, where, in consequence of a publication entitled Germany and the Revolution (*Deutschland und die Revolution*, 1819), in which he censured the persecution of the liberal party in Germany, he was about to be arrested and conducted to Old Prussia, in opposition to an express law of the Code Napoleon, which still prevails on the Rhine. But Gőrres fled to France, where he found protection on condition, as he was given to understand, that he remained quiet. He remained in Strasburg until the death of the duke of Berry put it in the power of the French ministers to confine all suspicious persons according to their pleasure; a power which, being contrary to the French constitution, so disgusted Gőrres, that he went to Switzerland, where the libraries of St. Gall, Schaffhausen and Zűrich, furnished him with means for his historical investigations. In 1821 were published, at Stuttgart, his Europe and the Revolution, and On the Affairs of the Provinces of the Rhine, and my

own Concerns (*In Sachen der Rheinprovinzen und in eigner Angelegenheit*)—writings which found their admirers as well as their enemies. They were prohibited in various parts of Germany—a trouble which might well have been spared, as the mystical language which pervades Gőrres' works deters most people from reading them through. Concerning his last publication, The Holy Alliance and the Nations, considered with Reference to the Congress of Verona, we must pass the same judgment. Gőrres, in 1827, was living at Frankfort on the Maine.

Gœrtz, George Henry, baron, of an ancient family, privy counsellor to duke Christian Augustus of Holstein, joined Charles XII at Stralsund, on his return from Turkey. His activity and intelligence induced Charles to take him into his service, and he was soon placed at the head of affairs. The desperate state of Sweden seemed only to render his projects for its rescue more vast, and his activity more unabating. (See *Charles XII.*) His policy grasped at all possible resources, and he endeavored, by the active prosecution of war, to obtain favorable conditions of peace. The impoverished condition of the country left the government without resources, and he endeavored to create a fictitious capital, by giving to a copper currency the nominal value of silver, and pledging the faith of the government for its redemption. His negotiations with Russia had almost reached a happy termination, when Charles, encouraged by new hopes, invaded Norway. But scarcely had Charles fallen before Frederickshall (Dec. 11, 1718), when the foreign minister fell a sacrifice to the hatred of the nobility and of the successor to the throne. He was arrested, and accused of having prejudiced the king against the senate, and all his colleagues; of having induced him to undertake ruinous enterprises, especially the unfortunate expedition into Norway; of having put bad coin into circulation, and of having mismanaged the sums intrusted to him. He was condemned and beheaded, without a hearing, Feb. 28, 1719. Gőrtz composed his own epitaph; namely, *Mors regis, fides in regem, est mors mea* (The king's death, and my fidelity towards the king, is the cause of my death). He died with firmness. He was a statesman of distinguished talent, but unscrupulous in the choice of means for effecting his ends. (See Voltaire's *Life of Charles XII.*)

Gœthe, John Wolfgang von; born August 28, 1749, at Frankfort on the Maine, where his father, a doctor of law and imperial counsellor, was highly respected. Gőthe, the greatest modern poet of Germany, has described his own life, in which, with a master hand, he unfolds the secret springs of the human character, and gives us the key to the most important periods of his life, and consequently to the productions by which they were respectively distinguished. Gőthe's father was an admirer of the fine arts, and surrounded by pictures, which early developed, in the son, the nice discrimination and the active observation for which he is remarkable. The seven years' war broke out when Gőthe was eight years old, and count de Thorane, *lieutenant du roi* of the French army in Germany, was quartered in the house of his father. The count, who was a man of taste, soon gave employment to the artists of Frankfort. Young Gőthe was often present at the conversations of the count with the artists respecting the plans of pictures, the way of executing them, &c. These conversations had a great influence upon the mind of the young poet. The count was fond of him, and allowed him to take part freely in the conversations; and some pictures, relating to the story of Joseph, were actually painted from his suggestions. At the same time, he learned the French language practically, and a French company, then performing in Frankfort, awakened his taste for dramatic performances. Drawing, music, natural science, the elements of jurisprudence, and the languages, occupied him alternately. To assist his progress in the languages, he formed the plan of a novel, in which seven brothers and sisters correspond with each other in different languages. The youngest of these fictitious persons used Jewish-German, which led Gőthe to study a little Hebrew, in which he never, indeed, became a great adept, but which, nevertheless, had an influence on him in his childhood, and may have had a tendency to encourage his inclination to Oriental poetry in his later years. By his study of Hebrew, Gőthe became more intimately acquainted with the Old Testament, and the History of Joseph was his first poetical work. His love for spectacles attracted his attention to a puppet show; and in the beginning of his *Wilhelm Meister* he undoubtedly took from his own life the motives of Meister's love for puppet shows, which he dwells upon in a way not very palatable to the taste of foreigners. Gőthe very early fell in love,

and, as often happens in the case of boys of an ardent temperament, with a girl much older than himself, who, of course, treated him like a child. Her name was Margaret, the name which Göthe afterwards gave to the mistress of Faust. Though he was then a mere boy, his passion was so violent as to deprive him of sleep and appetite, so that he fell seriously sick. With returning health, he acquired a firmer character, and applied himself with more zeal to his preparation for the university. He went to Leipsic, where Gottsched still lived; but Ernesti and Gellert chiefly attracted his attention. The young poet did not follow any regular course of studies. His mind was always active, but the subjects of his study were regulated by his feelings. German poetry was then in a critical state. It was generally felt, that the old bombastic manner must be shaken off, before poetry could make any important progress. Precision and conciseness were then the great *desiderata*, and Göthe soon learned to feel their importance. The English poets were now imitated, instead of the French, who had previously been servilely copied. He began at this period, what he practised throughout his life, to imbody in a poem, or in a poetical form, whatever delighted or grieved, pleased or displeased him; in a word, whatever occupied his mind intensely; and no one, perhaps, was ever more in need of such an exercise, as his nature continually hurried him from one extreme to another. Several dramatic pieces were projected by him at this period, when he first realized the immense difference between the form and the substance of religion, law, morals, in short, of all the great subjects which most deeply affect the well-being of man. The fine arts were not neglected, and he zealously studied the first authors on this subject. He always had a taste for drawing, and, while at Leipsic, also attempted engraving. Improper diet and other causes now brought on a disease, from which he had hardly recovered, when he left Leipsic, in 1768. His health was much impaired, and, on his return home, he was affectionately nursed by a lady named von Klettenberg, and his conversations and correspondence with her were the origin of *Bekenntnisse einer schönen Seele* in his *Meister*. At the same time, this connexion led him to the study of mystico-alchemical books (the traces of which are so apparent in Faust), and also to chemistry. He was also led, by the reading of several religious works, to construct for himself a strange theological system, of which New Platonism was the groundwork. He subsequently went to the university of Strasburg, to pursue the study of law, according to the wish of his father, but gave, in fact, more attention to the study of chemistry and anatomy than to that of law. At Strasburg, he became acquainted with Herder (q. v.) —a decisive circumstance in his life. Herder made him more acquainted with the Italian school of the fine arts, and inspired his mind with views of poetry more congenial to his character than any which he had hitherto conceived. While here, in the immediate presence of the renowned minster of Strasburg, Göthe wrote a short treatise on Gothic architecture. The treatise contains some views which he afterwards abandoned. Here, on French ground, and so near to the confines of the French language, he shook off all his predisposition for the French character. In 1771, he took the degree of doctor of jurisprudence, and wrote a dissertation on a legal subject. He then went to Wetzlar, where he found, in his own love for a betrothed lady, and in the fate of a young man named Jerusalem, the subjects for his *Werther*. The attention of the public was first attracted to him by his *Götz* (published 1773). *Werther* appeared in 1774. November 7, 1775, he went to Weimar, on the invitation of the duke of Saxe-Weimar, who had just begun his reign. In 1776, he was made privy-counsellor of legation, with a seat and vote in the privy-council. He made a journey to Switzerland in the same year, with the prince. In 1782, he was made president of the chamber, and ennobled. In 1786, he made a journey to Italy, where he remained two years, visited Sicily, and remained a long time in Rome. In 1792, he followed his prince during the campaign in Champagne. He was afterwards created minister; received, in 1807, the order of Alexander-Newsky from Alexander of Russia, and the grand cross of the legion of honor from Napoleon; and lives at present retired from affairs, and devoted to the study of nature, and to literary labors.

If we survey the variety of the productions of this great man, not only in all branches of poetry, but also in natural science, we cannot help admiring the activity and the versatility of his genius—his *Vielseitigkeit*, as the German phrase is. His genius appears most wonderful, if

we throw a glance at what German literature was when he found, and what it is now that he is leaving it, and how it has been affected by him. Göthe was born at a period when the modern German literature was far from having acquired independence and consistency; and, in the different periods of his life, it is easy to discover the influence at one time of French literature, at another of classic literature, &c.; but these influences, though sufficient to destroy the vigor and energy of many a genius, rather served to develope his powers more fully. It cannot be denied, however, that even he has sometimes been led astray, as, for instance, in his polished and cold *Eugenie*. But in what branch has Göthe most excelled? Is it the epic? He has enriched German literature with some of the most popular epic productions; but his epic descriptions cannot rival the best descriptive compositions of English literature (which may be partly accounted for from the character of the two languages); nor are the conceptions of his epics of the highest character. Is it the drama? He has produced some beautiful dramas, and his Iphigenia, justly called, by A. W. Schlegel, *ein Nachgesang der Griechen*, will always be considered as a masterpiece; but, generally speaking, his dramas do not give us sketches of great, important, or interesting characters, nor the picture of a great action—the two chief points of dramatic poetry; and he stands, in this respect, very far below Shakspeare. Nay, he does not even do justice to historical characters, as his Egmont shows. Is it didactic poetry? He has written several didactic poems, but he cannot be said to have excelled in this branch. Is it the novel? He has presented German literature with some novels, which will always rank among the best; but their excellence, of which we shall presently speak, is not in the plot, nor particularly in the characters described. In short, what is the prominent feature of Göthe's excellence? We think Göthe must be called, preëminently, the *poet of philosophy*. It is the philosophy of life and of individual character, pervading his works, which places them among the first ever produced. Hence he has been able to devote his powers to all forms of poetry; for the drama was not to him what it was to Shakspeare, nor the epic what it was to Ariosto. We do not say that his conceptions are in no degree affected by the dress in which they are clothed, but that the form of poetic composition, which he at any time adopts, remains with him more a matter of form than with those who are preëminent in any particular branch. Hence his greatest production is his Faust, emphatically a philosophical poem, which will long remain unrivalled; for it is the best of Göthe's productions in a department for which he seems to have been born. His beautiful songs and shorter poems, elegies, distichs, &c., have the same peculiar character; for though many or most of them cannot be called preëminently philosophical, yet they are all tinged with the profound reflections of his philosophical mind, and continually remind us of the deep wells, from which our griefs and joys, fears and hopes, spring. The circumstance, that there is in Germany no national life, that no grand ideas affect the whole mass with a common impulse, that there are few historical recollections which are sources of a common pride to the whole nation—all this had a great influence on Göthe. It was one of the reasons of his universality, and also the reason that his genius directed itself to the delineation of the character of the individual man, considered apart from the influences which act so strongly upon the mind in communities more strongly imbued with a common spirit. In this respect, he resembles not a little the poets and wise men of the East, who, under a despotism which crushes freedom of action, concentrate their thoughts on the inward man.* It is this state of his country, also, to which we must ascribe the want of, we might call it, *manliness* in Göthe's poetry, a characteristic which distinguishes many of the British bards. Göthe, we repeat it, is the most universal poet; thoroughly modern in some of his inimitable songs, in which he gives vent to the tenderest emotions of the heart with a sincerity at times almost childlike; whilst, in other productions, he exhibits the spirit of ancient literature to a degree

* The want of a national spirit in Göthe appears in the 29th epigram, in his *Epigramme, Venedig*, 1790, which ends with the following lines:

"Nur ein einzig Talent bracht' ich der Meisterschaft nah:
Deutsch zu schreiben. Und so verderb' ich ungluecklicher Dichter
In dem schlechtesten Stoff leider nun Leben und Kunst."

The language which Göthe thus decries, and the literature contained in it, are almost all which the Germans have to remind them of their being one nation. Great changes must take place before a German poet can sing, with genuine spirit, of liberty and patriotism. The artificial exhibitions of feeling on these subjects, which we witness at present, remind us of the imitations of Grecian temples in modern gardens: the form of a temple is there, but without the deity to adore.

which probably no modern poet of any nation has reached, as the resemblance is not merely in the form, but in the very conception of the ideas. The service which Göthe has done to the German language is immense; he has elevated it, and used it with that ease and freedom, with which genius always handles its material. The clearness and simplicity of his prose style make it the best model for the imitation of his countrymen. Göthe has received an honor, of which, perhaps, no poet before him can boast. Several professors in German universities have already, during the life of the author, lectured on various poems of his, whilst several authors have written commentaries and treatises on his productions. If the Germans have often been reproached with ingratitude towards their great men, they cannot be charged with it in regard to Göthe. They have showed the greatest enthusiasm for him in all periods of his life. It may, perhaps, be said, with truth, that the deficiency of Göthe's productions in great national ideas, such as we find in the poets of other countries, is partly owing to his having passed a great portion of his life at the court of a petty prince. But still his whole organization has fitted him to be the observer of individual and of social life in the world around him. His mind has no historical cast, and neither the progress of mankind in different stages of society, nor the great characters who have appeared as representatives of these stages, seem to have excited a powerful interest in him. So, too, his own age seems to have passed by him without exciting in him that interest for either of the great contending parties, which is so strong in minds of a different mould. Göthe's *Farbenlehre* (Doctrine of Colors), and *Beiträge zur Naturwissenschaft überhaupt, insbesondre zur Morphologie*, display his activity in the study of nature. He still continues to write on the fine arts, and on natural philosophy in the most various departments; and no life has ever been spent in greater activity of mind, and more universal power of observation and production. Göthe is, moreover, of a most amiable disposition. His popularity appears from the following anecdote:—The wife of a Silesian weaver, being obliged to go to Saxony, and hearing that she had travelled (on foot) more than half the distance to Göthe's residence, whose works she had read with the liveliest interest, continued her journey to Weimar for the sake of seeing him. Göthe declares that the true character of his works had never been better understood than by this woman. He gave her his portrait. The interesting correspondence between Göthe and Schiller has been recently published.

GŒTZ VON BERLICHINGEN. (See *Berlichingen.*)

GOËZ Joseph Francis, baron of, a celebrated painter, was born Feb. 28, 1754, at Hermannstadt, in Transylvania, where his father was lieutenant-colonel of a garrison. He was employed in Vienna in the department of justice. His leisure was devoted to the study of the arts. In 1784, he published his series of 160 etchings illustrative of the passions. At the same time appeared his *Exercises d'Imagination de différens Caractères et Formes humaines*—a series of prints, representing chiefly rural scenes illustrative of character. In 1787, Goëz received an invitation from the empress Catharine II, to accompany Forster, as draughtsman, on a voyage round the world; but the project was abandoned on account of the war with Turkey. In January, 1791, he was ordered to leave Munich, on suspicion of being connected with the order of the illuminati. He retired to Ratisbon, where he died in 1815. The works of this artist are generally esteemed.

GOFFE, William, one of the regicides in the time of the English revolution, and a major-general under Cromwell, left England before the restoration, in company with general Whalley, and arrived at Boston in June, 1660. They were received kindly by governor Endicott, and resided at Cambridge till February, 1661, when the intelligence reached them that they were not included in the act of indemnity. They then removed to New Haven, and were concealed by the principal inhabitants. They afterwards resided for some time on West Rock, and in the neighboring towns. But in 1664, they removed to Hadley, Massachusetts, and remained concealed 15 or 16 years, in the house of the reverend Mr. Russel. When the Indians attacked the town, in 1675, and threw the inhabitants, who were assembled for public worship, into the utmost confusion, Goffe, who was entirely unknown to them, white with age, of a commanding aspect, and clothed in an unusual dress, suddenly presented himself among them, and, encouraging them by his exhortations, placed himself at their head, and by his military skill secured them the victory. The battle had scarcely terminated, when he disappeared; and the people, alike ignorant of the place

whence he came, and of his retreat, regarded him as an angel sent for their deliverance. He died at Hadley, it is supposed, about the year 1679.

Gog and Magog. Ezekiel predicts the destruction of Gog and Magog (c. xxxviii and xxxix), by the Jews, and mention is also made of them in Revelation (c. xx). Interpreters have given very different explanations of these terms; but they generally understand them to be symbolical expressions for the heathen nations of Asia, or more particularly for the Tartars or Mongols. Magog is mentioned as the second son of Japheth in Genesis (c. x. 2).

Goggles, in surgery, instruments used for the cure of squinting, or that distortion of the eyes which occasions this disorder. They are short conical tubes, composed of ivory stained black, with a thin plate of the same ivory fixed in the tubes; through the centre of the plates is a small circular hole, to transmit the rays of light.

Goitre. (See *Wen*.)

Golconda (now called *Hyderabad*); a province of Hindostan, in the Deccan, bounded N. by Berar, E. by the Circars, S. by the Mysore and the Carnatic, and W. by Dowlatabad and Bejapour. It is situated chiefly between lat. 16° and 19° N. Its ancient name was *Tellingana*, and it was formerly a portion of a very extensive empire, which comprised all the peninsula from cape Comorin to the northern extremity of Orissa. Much of the soil is very fertile, and produces great crops of cotton, rice and other grain; also vines in abundance. It has been chiefly celebrated for its diamond mines, the principal of which are in the neighborhood of Raolconda and Culloor. 6000 men were constantly employed in these mines, but they have ceased to be important, and now hardly pay the expense of working. This country is subject to the Nizam. Having long been under a Mohammedan government, a considerable portion of the inhabitants are of that religion; the majority, however, are Hindoos; but the people are by no means equal to those of the British provinces. Hyderabad is the chief town.

Golconda (called also *Mankul*); a fortress of Hindostan, formerly the capital of Golconda, and the residence of the kings; 5 miles W. N. W. of Hyderabad. This fortress, for extent, might be called a city, in the middle of which rises a hill like a sugar loaf. It is esteemed by the natives impregnable, but is extremely hot and unhealthy. It is now considered as the citadel of Hyderabad, and the repository of the wealth of the Nizam.

Gold is the only metal which has a yellow color—a character by which it is at once distinguished from all other simple metallic bodies. It is the most malleable of the metals. It is exceedingly soft and flexible, but its tenacity is sufficiently great to sustain, in a wire one tenth of an inch in diameter, 500 pounds weight without breaking. Its specific gravity is 19.3. In hardness it is above lead and tin, but inferior to iron, copper, platina and silver. Its lustre does not equal that of steel, platina or silver, but it surpasses the other metals in this respect. It may be exposed for any length of time to the atmosphere, without suffering the least change. It is also equally unalterable in the common fire; but on being exposed to powerful burning mirrors, or to the heat of the oxyhydrogen blowpipe, it melts, and even rises in vapor. Gold is not oxidized or dissolved by any of the pure acids. Its only solvents are chlorine and nitro-muriatic acid; and, according to sir H. Davy, the chlorine is the agent in both cases, since the nitro-muriatic acid does not dissolve gold, except when it gives rise to the formation of chlorine. It is to be inferred, therefore, that the chlorine unites directly with the gold, and that the compound formed is a chloride of gold. There is no inconvenience, however, in regarding it as a muriate; since reägents act upon it as if it were such. The gold is precipitated from its solvent by a great number of substances. Lime and magnesia precipitate it in the form of a yellowish powder. Alkalies exhibit the same appearance; but an excess of alkali redissolves the precipitate. The precipitate of gold obtained by a fixed alkali, appears to be a true oxide, and is soluble in the sulphuric, nitric and muriatic acids; from which, however, it separates by standing. Gallic acid precipitates gold of a reddish color, and very soluble in nitric acid, to which it communicates a fine blue color. Ammonia precipitates the solution of gold much more readily than fixed alkalies. This precipitate, which is of a yellowish brown color, possesses the property of detonating with a very considerable noise, when greatly heated. It is known by the name of *fulminating gold*. Most metallic substances precipitate gold from its solution in nitro-muriatic acid. Lead, iron and silver precipitate it of a deep and dull purple color; copper and iron throw it down in its metallic state. A plate of tin, immersed in a solution of gold, affords a purple powder, called the *purple powder of Cassius*, which is

used to paint in enamel. Ether, naphtha and essential oils take gold from its solvent, and form liquors, which have been called *potable gold.* The gold which is precipitated on the evaporation of these fluids, or by the addition of sulphate of iron to the solution of gold, is of the utmost purity. The principal use of gold, as is well known, is in coinage. It has been with mankind, from time immemorial, the representative sign of every species of property. Even before the art of coining was invented, it passed for money in the condition in which it was found in the earth; and in this form it still enjoys a currency in many parts of Africa. It is rarely employed in a state of perfect purity, but is almost universally alloyed with copper, or with silver, in order to increase its hardness. The alloy of gold and silver is found already formed in nature, and is that most generally known. It is distinguishable from that of copper, by possessing a paler yellow than pure gold, while the copper alloy has a color bordering upon reddish yellow. A variety of means are employed to judge of the quality of alloys, supposed to consist in part, or principally, of gold, without resorting to a regular analysis. The most common of these consists in the use of the *touchstone* (for the nature of this substance, see *Quartz*). A mark is made upon the stone with the alloy, upon which a drop of nitric acid is placed by means of a feather; if the metallic streak disappears, the alloy is destitute of gold; if visible only in little points, at distant intervals, it indicates a small proportion of this metal; whereas, if the continuity and density of the mark remain unbroken, it evinces that the piece on trial is pure gold. This test is obviously founded upon the property possessed by gold of being insoluble in nitric acid, while silver, copper and their alloys, with zinc, are instantly taken up by this solvent. It requires, however, much practice to determine, with any considerable degree of precision, the amount of gold present in alloys by means of this test. The trial of specific gravity is another mode of ascertaining the proportion of gold in alloys; and it was in this manner that Archimedes detected the amount of silver in a crown which was to have been made of pure gold for Hiero, king of Syracuse. But this method only gives approximations, since certain alloys are more, and others less dense, than the mean density of the metals which compose them. In the coining of gold, where it is necessary to be assured of the purity of the metal, the trials just mentioned are never adopted. If the gold to be made use of appears to contain copper (which is inferred from its reddish tinge), it is made to undergo cupellation with a given quantity of pure lead; by which means the copper quits its union with the gold, and unites with the lead, leaving the former by itself, and, in this way, the proportion of gold in the alloy is ascertained. If silver is presumed to be the alloying metal, the operation consists in melting the alloy with three times its weight of silver, rolling the compound into thin sheets, forming these into coils, and plunging them into nitric acid, slightly diluted: the silver is promptly dissolved, while the gold remains unaffected. This operation is called *quartation*, and the separation of the silver by nitric acid, *parting*.—The art of gilding metals (see *Gilding*) depends upon the double property which mercury possesses, of amalgamating with gold, and of becoming volatile by heat, and thus quitting the gold, which adheres strongly to the metal upon which the mercurial amalgam has been spread. The composition of the amalgam generally used, is 8 parts of mercury to one of gold. The malleability and extreme divisibility of gold are the foundation of the art of *gold-beating*; and these two properties are so remarkable in this art, that natural philosophers are in the habit of quoting the results it furnishes as examples of the divisibility of matter. Boyle has observed that a grain of gold, reduced to leaves, will cover a surface of 50 square inches; that each one of these square inches may be divided into 46,656 other little squares, and that, of course, the entire amount of surface derived from one grain of gold is capable of being divided into 2,322,800 parts, each of which is visible to the naked eye. In consequence of the wonderful extension which the gold-beater is enabled to give to this precious metal, it is employed for ornamental purposes to an extent which, from its comparative scarcity, would otherwise be impossible. Thus it is estimated, that an equestrian statue, of the natural size, may be gilded with a piece of gold not exceeding in value $2.50. The gilding of the dome of the *Hôtel des Invalids* at Paris, cost $18,811. And in India, where it is common to gild towers, bridges, gates and colossal idols, it is known to be attended with still less expense. The following is a short account of the ingenious art of *gold-beating*. The gold used is as pure as possible, and the operation is commenced with masses

weighing about 2 ounces. These are beaten into plates 6 or 8 inches long, by $\frac{3}{4}$ of an inch wide. They are then passed between steel rollers, till they become long ribands, as thin as paper. Each one of these is now cut into 150 pieces, each of which is forged on an anvil, till it is about an inch square, after which they are well annealed. Each of the squares in this state weighs $6\frac{4}{10}$ grs., and in thickness is equal to $\frac{1}{756}$ of an inch. The 150 plates of gold, thus produced from one mass, are interlaid with pieces of very fine vellum, about 4 inches square, and about 20 vellum leaves are placed on the outsides; the whole is then put into a case of parchment, over which is drawn another similar case, so that the packet is kept close and tight on all sides. It is now laid on a smooth block of marble, from 200 to 600 pounds in weight, and the workman begins the beating with a round-faced hammer, weighing 16 pounds; the packet is turned, occasionally, upside down, and beaten with strong but not acute strokes, till the gold is extended nearly to an equality with the vellum leaves. The packet is then taken to pieces, and each leaf of gold is divided into four with a steel knife. The 600 pieces thus produced are interlaid with pieces of animal membrane, from the intestines of the ox, of the same dimension and in the same manner as the vellum. The beating is continued, but with a lighter hammer, called the *shoddering hammer*, and weighing about 12 pounds, till the gold is brought to the same dimensions as the interposed membrane. It is now again divided into four, by means of a piece of cane, cut to an edge, the leaves being by this time so light, that any accidental moisture, condensing on an iron blade, would cause them to adhere to it. The 2400 leaves hence resulting are parted into three packets, with interposed membrane as before, and beaten with the *finishing*, or *gold* hammer, weighing about 10 pounds, till they acquire an extent equal to the former. The packets are now taken to pieces, and the gold leaves, by means of a cane instrument and the breath, are laid flat on a cushion of leather, and cut, one by one, to an even square, by a cane frame; they are lastly laid in books of 25 leaves each, the paper of which is previously smoothed, and rubbed with red bole, to prevent them from adhering. *Gold wire*, as it is called, is in fact only silver wire gilt, and is prepared in the following manner. A solid cylinder of fine silver, weighing about 20 pounds, is covered with thick leaves of gold, which are made to adhere inseparably to it, by means of the burnisher: successive laminæ are thus applied, till the quantity of gold amounts to 100 grains for every pound troy of silver. This gilt silver rod is then drawn successively through holes made in a strong steel plate, till it is reduced to the size of a thick quill, care being taken to anneal it accurately after each operation. The succeeding process is similar to the former, except that a mixed metal, somewhat softer than steel, is employed for the drawing plates, in order to prevent the gilding from being stripped off; and no further annealing is requisite after, if it is brought to be as slender as a crow-quill. When the wire is spun as thin as is necessary, it is wound on a hollow copper bobbin, and carefully annealed by a very gentle heat: finally, it is passed through a flatting-mill, and the process is complete. According to doctor Halley, 6 feet in length of the finest gilt-wire, before flatting, will counterpoise no more than a grain; and as the gold is not quite $\frac{1}{57}$ of the whole, a single grain of gold, thus extended, will be 345.6 feet long, and only the millionth part of an inch in thickness.—The oxide of gold is used in staining porcelain, to which it communicates a color differing but slightly from copper-red. For this purpose, it is precipitated from its muriatic solution by sulphate of iron, and is fixed by the oxide of bismuth, in the proportion of $\frac{1}{12}$ to $\frac{1}{19}$. Such are the principal uses of gold and its oxide; for its medicinal virtues are of too doubtful a character to deserve mention. We shall now pass to the description of the ores of gold, their mode of occurring in nature, and the means made use of for obtaining this metal from them.—*Native gold* is found crystallized in the forms of the octahedron, the cube and the dodecahedron, of which the cube is considered as the primary form. It also occurs in filiform, capillary and arborescent shapes; as, likewise, in leaves or membranes, and rolled masses. It offers no indications of internal structure, but, on being separated by mechanical violence, exhibits a hackly fracture. Its color comprises various shades of gold yellow. Its specific gravity varies from 14.8 to 19.2. It is commonly alloyed by copper, silver and iron, in very small proportion. Native gold exists in veins in primitive mountains, but not in the greatest quantity in those which are esteemed to be of the oldest formation. Its immediate gangue is generally quartz; and it is associated with the ores of silver, sulphuret of iron, lead, nickel, cop-

per, &c. It is often so minutely disseminated, that its presence is detected only by pounding and washing the rocks in which it exists. But native gold is more often found in the sand of rivers, in valleys and plains, into which it has been carried, from its original repositories, in the shape of larger or smaller, generally flat pebbles, mingled with quartz. The mountain of Vorospatak, near Abrudbanya in Transylvania, is a remarkable instance of a rock impregnated throughout with a small portion of gold. It has been worked to a considerable extent since the time of the Romans; it consists of greywacke and porphyry. In a similar rock it is found in many places along the chain of the Alps, and in the Schlangenberg in Siberia. But the greatest quantity of gold is obtained from the alluvial soils of several islands in the Indian ocean, from the southern, middle and western parts of Africa, and from Brazil, Mexico and Peru. The sands of several European rivers, also, as the Danube, the Rhine and the Rhone, afford small quantities of gold; and, of late years, it has been discovered in similar situations in the U. States, in the Carolinas and Georgia. The mines of North Carolina are chiefly wrought in the three ranges of counties between Frederic and Charlotte, which lie in a direction about N. E. and S. W., corresponding with the general line of the coast. The most lucrative diggings have been made in the counties of Mecklenburg and Cabarras; in the latter, a single lump of gold was found weighing 28 pounds. The gold is not wholly obtained from alluvion in these districts, but is occasionally pursued in the quartz rock, which abounds with cavities, often partly filled with decomposed iron pyrites. Humboldt estimates the average product of gold per year of South America and New Spain, at nearly $11,000,000; while Europe furnishes annually about one twelfth this amount, the greater part of which comes from the mines of Hungary. The largest amount of gold from Georgia and Carolina, coined in any one year, has been about $320,000. The metallurgic treatment of the ores of gold, where the gold is free, consists in submitting them to the contact of mercury after they have been crushed and rendered fine by washing. The levigated ore and the mercury are agitated together, until it is conceived that the amalgamation is perfect, when the compound is exposed to a heat sufficiently intense to volatilize the mercury, which is condensed, and recovered for successive operations. When gold occurs intimately mingled with iron pyrites, the process differs from that described above, only in that it is necessary to roast the ore, in order to pulverize it sufficiently to set it at liberty.

Gold-beating. (See *Gold.*)

Gold Thread. The gold thread commonly used in embroidery, consists of threads of yellow silk, covered by flattened gilt wire, closely wound upon them by machinery.

Gold Wire. (See *Gold.*)

Gold Coast; name given to a country of Africa, near the Atlantic, about 120 leagues in length from E. to W., between the rivers Ancobar and Volta. It contains a variety of different states and kingdoms, and received its name from the immense quantity of gold which it produces. Several of the European nations have settlements here—the Dutch at Elmina, and the English at Cape Coast Castle. The climate is exceedingly hot from October to March; the rest of the months are tolerable. The principal countries on the Gold Coast are Ancobar, Axem, Anta, Commenda, Fetu, Sabi, Adom, Agouna, Acra, Acambou, Labadde, Fantin, Incassan, Ningo, Sabu and Soko.

Golden Fleece. (See *Jason*, and *Argonauts.*)

Golden Fleece, Order of the, and The Three Golden Fleeces. (See *Fleece, Golden.*)

Golden Number, in chronology, a number showing what year of the Metonic, or lunar cycle, any given year is. To find the golden number, add 1 to the given year, and divide the sum by 19; what remains will be the golden number, unless 0 remain, for then 19 is the golden number. The discovery of the Metonic cycle exhibited such extensive astronomical knowledge, that it obtained great success and reputation in Greece, insomuch that the order of the period was engraved in letters of gold; whence it acquired the name of *golden number.* (See *Epoch.*)

Golden-Rod (*solidago*) is a genus of plants, belonging to the natural order *compositæ*, containing a great number of species, most of them natives of North America, where their brilliant yellow flowers are very conspicuous in the autumnal months, especially in the north-eastern part of the Union. They are perennial, chiefly herbaceous, with simple, undivided leaves, and bear numerous small flowers, disposed in spikes or panicles. The florets of the ray are about five in number, and yellow, the *S. bicolor* excepted, which

has white rays. The dried flowers of the *S. odora*, or sweet-scented golden-rod, form an agreeable substitute for tea. In Europe, the different species are cultivated in gardens for ornament. The island of St. Helena contains two species, which attain the stature of trees, and an arborescent one grows also in New Zealand.

Golden Rule; the name usually given by arithmeticians to the rule of proportion, or rule of three, on account of its extensive usefulness.

Gold-Finch. (See *Finch.*)

Gold-Fish; the trivial name of a beautiful species of *cyprinus*, found in the fresh waters of China, and distinguished for the splendid golden color of the membrane lying immediately beneath the scales. The *cyprinus aureus* of naturalists is subject to the most singular variations in color, being at certain times bright golden orange, and at others bronze-black or silver; in the latter stage of color, it is known as the *silver-fish*. A species called the *telescope carp*, from its singular form, is distinguished for the broad, expanded and foliate tail, which gives it a very peculiar appearance. This species are preserved in large ponds, where they breed, and acquire a size far greater than those introduced into this country. As an article of food, they are not used, and are only valued for their beauty and gentleness. They are said to be very prolific, and are easily bred, requiring scarcely any further attention than that of changing the water frequently. Individuals are sometimes met with, which want the dorsal fin, and others, which, by the uncommon dilatation of the eyes, appear very much deformed. The *cyprinus auratus* has been said to inhabit the fresh waters of North America; but, in every instance where specimens of this fish have been found in our rivers, they have been traced from the fish-ponds of the neighborhood, where numbers of them were kept. In length they rarely exceed nine inches; the body is full, and subfusiform; the scales large; and, as in all the species of this division, the fins are without spinous rays.

Goldoni, Charles, the most celebrated Italian writer of comedies of the 18th century, was born at Venice in 1707, where his grandfather, a Modenese, was a kind of farmer-general of the estates of the duke of Massa and Carrara, lying within the Venetian jurisdiction. The death of the old man, who was inclined to extravagance, involved the family in pecuniary embarrassments. Julius Goldoni, our poet's father, left Venice, therefore, and went to Rome. His wife, a woman of great vivacity and talent, remained with their children, two boys, and devoted herself exclusively to the education of the eldest, whose early display of intelligence made him her favorite. The lively Charles early showed a taste for theatrical representations. He read every dramatical production of which he could obtain possession, especially the works of the popular comic poet, Cicognini, and, when scarcely eight years of age, ventured to sketch a comedy, which excited the wonder of his relatives. They sent a copy of it to his father, who, in the mean time, had become a physician, and practised his profession at Perugia. He was delighted with the genius displayed by his eldest son, and felt anxious to have him with himself. The mother was obliged to consent. Father and son now erected a little social theatre. But, as is well known, women were not then permitted to appear on the stage in the papal states. On this account, our young Goldoni generally represented some female character. His fair complexion and beauty rendered him very suitable for these parts, and in Gigli's (q. v.) celebrated *Sorellina di Don Pilone*, for instance, he obtained great applause. He then enjoyed the instruction of the Jesuits, and afterwards pursued his studies at Rimini with the Dominicans. The severity and strictness of his instructer induced him to leave the place. A troop of strolling comedians was more attractive. He saw females on the stage, and was delighted. The comedians, also, won his affections. He resolved, therefore, to follow them secretly to Chiozza, where his parents then resided. They pardoned his foolish conduct. His father now destined him for the medical profession, and took him occasionally to visit his patients. But Goldoni, dissatisfied with this study, obtained permission to study law in Venice. Soon after, however, a relative procured for him a place in the papal college at the university of Pavia. Here, therefore, Goldoni again found himself transferred to a new world. His compeers in the college were principally young and dissipated abbés. Goldoni followed their example. Jurisprudence was treated as a secondary object, while dancing, horsemanship, fencing, music and gambling were zealously pursued. Still the youth, eager for knowledge, did not neglect to enrich his mind with useful information. His poetical and rhetorical powers continued to unfold, and procured him many friends; his satirical wit, however, made him dis-

agreeable to many people. On a certain occasion, at the instigation of some persons who afterwards betrayed him, he wrote a satirical piece, in which many individuals of respectable families in Pavia were ridiculed. He was, in consequence, expelled from the college and the city, and he went to Chiozza, to ask pardon of his parents. His father now took him to Udina (in Friuli), where Goldoni applied himself more earnestly than in Pavia to study. He, however, committed many youthful follies, and on this account was several times obliged to change his residence, until he became secretary to the vice chancellor of the criminal court in Chiozza, and afterwards accompanied this officer to Feltre, where, at the age of 22 years, he had an appointment, and applied himself with great zeal to his official duties. The theatre was at this time his only recreation. A tolerable troop of players performed in Feltre. But a theatre of amateurs, in the governor's palace, in which he made his appearance, was still more attractive to him. He was appointed its director, and not only arranged two operas of Metastasio for exhibition without music, but also wrote two comedies, The Good Father and The Singer, which met with great applause, as did also his performance. His father had, in the mean time, established himself as a physician at Bagnacavallo, in the delegation of Ravenna, and was anxious that his son should live with him. Goldoni consented. But scarcely had he arrived, when his father died, and left his family in embarrassed circumstances. He now resolved to apply himself in earnest to the law. He was admitted to the practice of his profession in Padua, and went to settle in Venice. He found but few clients, however, and was obliged to look out for other employment. He wrote little almanacs, some of which were successful, commenced an opera (*Amalasonta*), &c. He brought himself into notice by the successful issue of a law case, in which the first advocate of Venice was his opponent; and things would perhaps have gone well with him, had he not involved himself in new difficulties by an unhappy intrigue. A hasty promise of marriage brought on new embarrassments. He left Venice, and went to Milan. His opera (*Amalasonta*) was the only property which he carried with him. His hopes of making his fortune by means of it in this place were disappointed. The celebrated singer Caffarelli received him with that haughty incivility so common to successful players; and one of the directors showed him, in a friendly way, that his piece could not be set to music. Disappointed in his expectations, he burned his manuscript, not knowing to what he should next apply himself. The resident of the republic of Venice, however, took him into his house, and the poet composed his musical interlude, The Venetian Gondolier, which was well received, and was the first piece that he published. The events of the war in Italy, in 1733, interrupted the labors of the poet, who was driven successively from Cremona, Pizzighitone and Parma, was plundered by marauders, and finally unexpectedly met a troop of comedians in Verona, with which he returned to Venice. Here his tragedy, *Belisarius*, written at this time, obtained him much reputation. A second tragedy, called *Rosamunde*, failed; and the author, again placed in uncomfortable circumstances, went to Padua, with another company of players, which generally performed no pieces but his. Thus he wandered until 1736, the companion of strolling players, and lived in a continual scene of dissipation and intrigue, until he married the daughter of a notary in Genoa, and removed to Venice. Here he first began to cultivate that department of dramatic poetry in which he was to excel; namely, description of character and manners, in which he took Molière, whom he began to study about this time, for his model. But the prevailing taste in his native country for masques and extemporaneous comedy, was a great obstacle in the way of his design to reform the theatre in this respect, and he often found himself obliged to yield to the habits of the people and the players, among whom the famous harlequin Sacchi, and his company, were at that time conspicuous in Venice. In 1739, he was appointed Genoese consul in Venice, a station which he certainly filled with ability and diligence. It brought him little or no profit, however, and, in 1741, the poet saw himself under the necessity of again leaving Venice to seek a subsistence elsewhere. He removed with his family to Bologna, Modena and Rimini, and composed for the company of players in that place. On the way to Pesaro, he was robbed of every thing by Austrian hussars, and a rascally postillion set him and his wife down on their way in the open field, and drove off. Goldoni carried his wife through several streams on his back, and, in spite of all obstacles, finally arrived at the Austrian head quarters, where he had all his baggage restored to him. He now took the direction

of the theatre in Rimini, and, for some time, lived in comfortable circumstances. He then went to Florence and Siena, where he met with a good reception; and at Pisa he was persuaded by the Arcadians, at whose sessions he was present, to return to the practice of the law. Our advocate had now an extensive practice. Sacchi heard of this change, and requested him to prepare a new piece. Goldoni now labored in the night for the stage, and in the day time attended to his clients, Sacchi for the most part giving him the subjects of his pieces. At the same time, the Arcadians received him into their society, under the name of Polisseno Fegeio. Having suffered some neglect in Pisa, he again left the law, and followed a company of players, who adopted him as theatre poet to Mantua. From this place he went to Venice, from which he had been absent five years. Here, composing for the theatre *San Angelo*, he began his contest with the deep-rooted taste for harlequinades and extemporaneous pieces, and his genius at length brought about a new era in the art. Cares and vexation, however, threw him upon a sick bed. By his industry, the director of the theatre had been made rich, while he himself remained poor; and when he demanded a reasonable recompense, he obtained but the meagre permission to publish one volume of his works every year. Still he remained faithful to his agreement, followed the company to Turin, and, after the expiration of his contract, joined the theatre San Luca, but, at the same time, prepared a new edition of his works by subscription, by which he bettered his circumstances, while his opponents, the advocates of the old *Commedia dell' arte*, found new matter for censure. In 1758, being invited to the court of don Philip, at Parma, he wrote some operas, which were set to music by Duni and Piccini. In 1761, the Italian players invited him to Paris, where many of his pieces met with uncommon applause. By the influence of the dauphiness, he obtained the situation of reader and master of the Italian language to the daughters of Louis XV; but, on account of the death of the dauphin, the dauphiness, and the king of Poland, his employment and pension were suspended. At the end of three years, a yearly pension of 3600 livres was granted him. At the breaking out of the revolution, the poet, now 85 years of age, lost his pension, and the decree of the national convention of the 7th of January, 1793, on the motion of Chenier, restoring it, and making up the arrears, found him already in the arms of death. He expired the next day, having almost completed his 86th year. His widow received the arrears and a pension for herself. Goldoni's merits, in reforming the Italian theatre, cannot be mistaken. Many of his numerous pieces still retain possession of the stage in his native country, and, in translations, of the stages of foreign countries. Among the numerous editions of his works, that published at Lucca, in 1809, in 26 vols., is the most complete. Translations and imitations of some of his works have been made in French, German and English. Late writers of comedy have often drawn their materials from the rich mines of his wit and knowledge of the world. His talents, however, were best adapted to pieces in which character and intrigue predominated; and here it is impossible not to admire the fertility of his invention with respect to the plot, which, notwithstanding the number of his pieces, is always new, and his true delineation of character in every situation. His memoirs, giving the history of his own life, and of the theatre of his time, have been translated into English and German, and copied, somewhat abridged, into the *Collection des Mémoires sur l'Art dramatique*, published at Paris. Goldoni wrote them in French, in which he also composed two comedies, one of which, *Le Bourru bienfaisant*, was produced at Fontainebleau and Paris, in 1771, with great applause, and has maintained itself on the stage.

Goldsmith, or Silversmith; an artist who makes vessels, utensils and ornaments, in gold and silver. The work is either performed in the mould, or beat out with the hammer, or other engine. All works that have raised figures are cast in a mould, and afterwards polished and finished: plates, or dishes, of silver or gold, are beat out from thin, flat plates, and tankards and other vessels of that kind are formed of plates, soldered together, and their mouldings are beat, not cast. The goldsmith makes his own moulds, and for that reason ought to be a good designer, and have a taste in sculpture: he also ought to know enough of metallurgy to be able to assay mixed metals and to mix the alloy.

Goldsmith, Oliver, an eminent poet and miscellaneous writer, was born in 1731, at Pallas, in the county of Longford, Ireland. His father, the reverend Charles Goldsmith, sent him, at an early period, to Dublin college, and afterwards, with a view to the medical profession, to the university of Edinburgh. At both these in-

stitutions, the eccentricity and carelessness of his conduct involved his friends in considerable difficulties; and he was removed to Leyden at the expense of an uncle. After studying at the university for about a year, he left it, with only one clean shirt, and no money in his pocket, to make the tour of Europe on foot, and actually travelled in this way through Flanders, part of France, Germany, Switzerland and Italy. It was, probably, at Padua that he took a medical degree, as he remained there six months; but, his uncle dying while he was in Italy, he was again obliged to travel on foot to England, and reached London with a few pence in his pocket. A fellow collegian, doctor Sleigh, assisted him, and recommended him as an usher to a school. He remained but a short time in this situation, and then took lodgings in London, to follow the profession of an author. He conducted a department in the Monthly Review, wrote essays in the Public Ledger (since published under the title of the Citizen of the World), and a weekly pamphlet, entitled the Bee. In 1765, he appeared as a poet, by the publication of his Traveller. The celebrity which this poem procured its author, was the cause of his introduction to the most eminent literary characters of the day. In 1766, appeared his well-known Vicar of Wakefield, which at once secured merited applause. He also, about this time, composed one of his most successful works, a History of England, in a Series of Letters from a Nobleman to his Son (2 vols. 8vo.), which, for its elegance and liberal spirit, was usually attributed to lord Lyttelton. In 1768, his comedy of the Good-natured Man was acted at Covent-garden with but indifferent success, and he applied to the more certain labor of a Roman History, and a History of England, in 4 volumes. His poetical fame was greatly enhanced by the publication of his Deserted Village, in 1770, for which he could hardly be induced to take the proffered recompense of £100, until satisfied that the profits of the bookseller could afford it. In 1772, he produced his comedy of She Stoops to Conquer, which was completely successful. He did not, on this account, neglect compilation, and, besides a Grecian History, he supplied the booksellers with a History of the Earth and Animated Nature, composed out of Buffon and others, in a manner which was both amusing and instructive, although the scientific acquirements of the author were not sufficient to guard against numerous errors. Such was the confidence he had acquired in his skill in compilation, that he was meditating a universal dictionary of the arts and sciences, when a despondency of mind, probably owing to the derangement of his circumstances, brought on a low fever, which terminated his life in April, 1774. He was buried with little attendance in the Temple church, but a monument has been erected to his memory in Westminster abbey, with a Latin inscription, by doctor Johnson. The manners of Goldsmith were eccentric, even to absurdity; no writer of his time possessed more genuine humor, or was capable of more poignancy in marking the foibles of individuals, of which faculty his unfinished poem of Retaliation furnishes a very happy specimen. As a poet, his Traveller and Deserted Village have given him a deserved reputation; and his Vicar of Wakefield is one of the best known and most esteemed of English novels. His compilations are peculiarly felicitous. It was truly observed in his epitaph, by doctor Johnson, that he left no species of writing untouched, and adorned all to which he applied himself.

Golgotha. (See *Calvary*.)

Golownin, W. M., a Russian commodore, well known for his account of Japan, and his captivity there. In 1811, he sailed in the employment of the Russian government, as captain of the sloop of war Diana, from the coast of Kamtschatka, in order to determine the position of the southern Kurile islands, belonging to Japan. He arrived at the north-west coast of Enterpu in the middle of June, took on board a Russian Kurile as interpreter, and, July 5, landed on the island of Kunashir, the 20th of the Kurile chain. Here he met with a hostile reception; but, being afterwards lulled to security by appearances of friendship, he and his seven companions (two officers, four sailors and the interpreter), were seized and conducted to Matsmai, the capital, without, however, suffering any other ill treatment. This was done because Von Resanoff, by way of retaliation for the insult which he supposed himself to have received from the coldness with which the Japanese government had repelled him as Russian ambassador, had given orders to two captains of the navy, who belonged to the Russian American company, to ravage and plunder the Japanese coast, to rob the temples, and to burn the villages. Notwithstanding this, Golownin and his fellow prisoners received from the inhabitants proofs of the kindest sympathy. The suspicions of the government, however,

subjected them to continual examinations. At length they obtained permission to walk abroad. They found the Japanese courteous, and eager after knowledge. Even a fellow of their academy of sciences allowed the Russian officers to instruct him in European mathematics and physics. A Japanese philologist tried his skill at making a Japanese-Russian dictionary. At the end of two years, the favorable reports, which had been made by three Japanese governors, respecting the prisoners, procured them their liberty. Captain Rikord, who, in the mean time, had commanded the Diana, contributed in some measure to this, by bringing back and setting at liberty a Japanese nobleman, of whose person he had obtained possession. In November, 1813, the prisoners, with all their property restored and augmented by presents, were put on board the Diana, which lay at anchor in the harbor of Awatscho. Many of the Japanese sent them letters of congratulation, and the high priest ordered five days of public prayers for a prosperous voyage. The Narrative of my Captivity in Japan during the Years 1811—1813, and, in the appendix, An Account of Voyages to Japan, to procure the Release of the Author and his Companions, by Captain Rikord (London, 1817, 2 vols.), show that Golownin is an accurate observer. His statistical account of Japan cannot be so full nor so accurate as the work of Titsingh (who died at Paris 1812) upon Japan, which supplies the deficiencies of Kämpfer and Thunberg. (It was published in French, and translated into English by Schoberl, with engravings, under the title Illustrations of Japan, London, 1822.) Golownin has also published, in Russian, an account of shipwrecks. This navigator is now a member of the board of admiralty of the empire, and has been employed upon a new chart of the Frozen ocean, Beering's straits, together with the north-west coast of America, and the north-east of Asia. The Russian navigators, in honor of him, have called a sound which he discovered on the north-west coast of America, *Golownin's sound.*

Gomarus and Gomarists. (See *Reformed Church.*)

Gondar; a town in Africa, and the capital of Abyssinia, situated on a hill of considerable height, surrounded on every side by a deep valley; lon. 37° 40′ E.; lat. 12° 30′ N. It contains 10,000 families in time of peace, or 50,000 souls. According to Poncet, who visited Gondar in 1699 it was then 3 or 4 leagues in circuit, and contained 100 churches. It exhibited nothing of the splendor of a European city. The houses were of only one story, and there were no shops. The trade, which was extensive, was carried on in a vast open plain, where the goods were daily exposed on mats. The houses are chiefly of clay, the roofs thatched in the form of cones, which is always the construction within the tropical rains. At the west end of the town is the king's house, formerly a structure of considerable consequence; it was a square building, flanked with square towers; it was formerly four stories high, and from the top of it had a magnificent view of all the country southward to the lake Tzana. A great part of this house is now in ruins. (See *Bruce's Travels.*)

Gondola; a sort of barge, curiously ornamented, and navigated on the canals of Venice. The middle-sized gondolas are upwards of thirty feet long, and four broad; they always terminate at each end in a very sharp point, which is raised perpendicularly to the full height of a man.

Gondolier; the boatman of a gondola. (q. v.) The gondoliers were formerly an interesting part of the Venetian population, but since Venice fell under the dominion of the house of Hapsburg, the spirit of the population has departed; the lagoons are allowed to be choked, and to corrupt the air.

> In Venice Tasso's echoes are no more,
> And silent rows the songless gondolier.

The gondoliers formerly sung alternately stanzas of poems, particularly of Tasso's Jerusalem Delivered, though with great changes from the original, to beguile the time. This was called *Canta alla Barcariola.* (See the third note to canto iv. of Childe Harold.)

Gong, a Chinese instrument of music, is a shallow kettle, three inches deep, made of an alloy of tin, bismuth and copper, and is struck with a wooden mallet covered with leather. The sound is very loud.

Gongora, Louis, a celebrated Spanish poet, was born at Cordova in 1562. He was educated for the church, and was made chaplain to the king, and a prebendary in the cathedral of Cordova. His works have been published in one volume, quarto, under the title of *Obras de Dom. Louis de Gongora y Argore.* They consist chiefly of lyrical poems, in which he excelled, being called by his countrymen the *prince of lyric poets.* His style, however, is often difficult to comprehend, even to the Spaniards themselves, and he has had almost as many censurers as admirers in his own country. He died in 1627.

Gonsalvo, Hernandez y Aquilar, de Cordova, called the *great captain* (*el gran capitan*), was born at Montilla, near Cordova, in 1443, and, when 15 years of age, served under his father, don Diego, against the Moors of Granada. As a reward of his bravery, Henry IV, king of Castile, intrusted him with the command of a company, with which he spread terror to the very gates of Malaga, and, in 1460, decided the victory of Las Yeguas. The king himself knighted him on the field of battle. From 1458 to 1467, he served with distinction against the Moors, at the capture of Gibraltar and in the Catalonian war. After the death of Henry, Ferdinand and Isabella having ascended the throne, and the king of Portugal having declared war against them, Gonsalvo contributed not a little to the victory of Toro, in 1476. In the bloody war of Granada, he took many places by storm, and vanquished the boldest Moors who dared to meet him in single combat. Granada finally submitted, and, on the entry of the conquerors, he was appointed to carry the flag of Castile. Ferdinand then sent him with 5600 men to assist his relative, Frederic king of Naples, against the French. Having secured that throne, he returned to Spain, where he was engaged in subjecting the Moors, in the Alpuxarras, when Louis XII of France renewed the war against Naples. In 1500, Gonsalvo again set sail with a corps of 4300 men, ostensibly to assist the Venetians against the Turks. He delivered Zante and Cephalonia from the infidels, and restored them to Venice. He then landed in Sicily, and informed the king of Naples that he was come to secure that part of the kingdom which, by virtue of the treaty with Louis XII, had fallen to Spain. Frederic, finding himself so closely pressed by two enemies, finally retired with his treasures into an island. The French, under the duke of Némours, entered Naples, while Gonsalvo secured Calabria, and, according to the articles of the treaty, demanded also Basilicata and Capitanata. To this the French, who considered them as belonging to their part (Abruzzo), would not consent. The result was a war between France and Spain, which was carried on with a variety of fortune, until Gonsalvo, by the victory near Seminara in 1502, obtained possession of both Calabrias. In 1503, he gained a still more important victory near Cerignola, in consequence of which Abruzzo and Apulia submitted, and Gonsalvo marched into Naples. He then sat down before Gaëta. As the siege was protracted, he gave up the command to don Pedro Navarro, and advanced to meet the enemy. He defeated the marquis of Mantua; and, on the Garigliano, with 8000 men, obtained a complete victory over 30,000 French, the consequence of which was the fall of Gaëta. The possession of Naples was now secured. Ferdinand bestowed upon him the duchy of Sesa, and appointed him viceroy of Naples, with unlimited powers. His kindness, justice and magnanimity soon procured him the favor of the people. His prosperity, however, raised up powerful enemies against him, whose insinuations so far prevailed with Ferdinand, that he at first diminished his power, and finally recalled him from his post. Ferdinand even went to Naples himself, and took Gonsalvo with him back to Spain, and made him grand master of the order of St. James. Gonsalvo, dissatisfied with having lost his influence, conspired with the high constable of Castile against the king, whose prudent measures, however, quelled the insurrection in its very commencement. Gonsalvo retired to his estates in Granada. His differences with the king, who showed the greatest forbearance towards his old hero, continued for a long time. They were at last reconciled, and Gonsalvo was upon the point of again assuming the command of an army, when he died at Granada in 1515.

Gonzaga. On the decline of the imperial power in Italy, in the eleventh century, the principal families of Mantua took possession of the government of the place. Among these the house of the Bonacorsi was the most powerful during 40 years, until the house of Gonzaga rose to eminence. Aug. 14, 1328, Lodovico Gonzaga assumed the sovereignty, after his sons, inflamed by private revenge, had taken possession of Mantua, with 800 foot soldiers and 500 horsemen, slain Passenino de' Bonacorsi, the chief of the city, on the field of battle, and banished his followers. The emperor Louis of Bavaria then appointed Lodovico the imperial vicegerent. He died in 1360, aged 93. Among his descendants, John Francis Gonzaga, in 1432, obtained possession of the city, with its territory, under the title of a marquisate, as a fief from the emperor Sigismond. After that time, the house of Gonzaga was divided into several branches, from which sprung many celebrated individuals. With Vincenzo II the reigning line became extinct in 1627. The next heir would have been the duke of Nevers, Charles I of Gonzaga, but the

duke of Guastalla, Ferdinand II, who was one degree more remote, laid claim to the whole inheritance, and Charles Emanuel, duke of Savoy, claimed Montferrat. It was evident that the house of Nevers had a legal right, for Louis, duke of Nevers, father of Charles I, was brother of Francis III, grandfather of the duke, and, by going to France, did not renounce his claim to the succession. France, Venice and the pope supported him; for all three desired to see an end of the overbearing influence of the Spanish-Austrian power. Spain and Austria, on the other hand, supported the groundless claims of the duke of Savoy, whence arose a war concerning the right of succession to Mantua, which finally ended according to the wishes of Richelieu; for the emperor was obliged to invest Charles, duke of Nevers, with Mantua and Montferrat. He obtained peaceful possession of them in 1631. His grandson, Charles III (Charles II died in 1631, during his father's lifetime), succeeded him in 1637, and, during his reign, the principality obtained full independence. (He died in 1665.) His son and successor, Charles IV, received a French garrison into Mantua, and engaged, on the side of France, in the contest which grew out of the Spanish succession. On this account, the emperor Joseph I declared him under the ban of the empire. He died at Padua in 1708. Austria remained in possession of his territory, and Montferrat was transferred to Savoy. Many persons of this family have obtained military renown. Others have been conspicuous for their love of the arts and sciences. Lodovico Gonzaga sent Pietro Crema, with letters and a large sum of money, to France, in order to persuade Petrarch to come to him. Another Lodovico Gonzaga, who died about 1549, was a poet. Cæsar, in 1565, erected the academy *degl'invaghiti;* and others of the family founded galleries of paintings and antiquities. Giulio Romano, under their patronage, established an extensive school for painting, and many celebrated artists received from them support and honor. Lucretia Gonzaga, the unfortunate wife of Paolo Manfrone, left many letters, which have been collected and published (1552, which Haym, however, ascribes to Hortensio Landi).—Among those who have obtained renown by their influence in state affairs, Louisa Maria, the daughter of duke Charles, is conspicuous. She was married successively to Ladislaus and Casimir, kings of Poland, and died in 1667. Her sister Anna, the wife of the prince palatine Edward, for some time played an important part at the French court. She died at Paris in 1684, aged 68 years, and, from the manuscripts which she left at her death, the interesting *Mémoires d'Anne de Gonzagues* were compiled and published (London and Paris, 1786).

Good Friday. (See *Friday, Good.*)

Good, John Mason, a physician, poet and philological writer, was the son of a dissenting minister, and was born at Epping, in Essex, in 1764. He was apprenticed to a surgeon at Gosport, and engaged in practice at Coggeshall, in his native county. In 1793, he removed to London, where he carried on business for several years as a surgeon and apothecary. In 1810, and the two following years, he delivered physiological lectures at the Surrey institution, which were afterwards published. Having obtained a diploma from the university of Aberdeen, he commenced physician in 1820, and continued to practise in that capacity till his death, January 2, 1827. His principal works are, Memoirs of the Life and Writings of Dr. Alexander Geddes (1803, 8vo.); translations of Solomon's Song and the Book of Job; a translation of Lucretius, On the Nature of Things, (1805, 2 vols. 4to.); Medical Technology (1810, 8vo.); A Physiological System of Nosology (1817, 8vo.); and The Study of Medicine, (1822, 4 vols. 8vo.).

Goodwin Sands; a bank in the sea, near the coast of Kent, said to have been formerly part of the estate of earl Goodwin; till, by neglect in preserving the dikes and walls, the whole was drowned by the sea. A great part is dry at low water. It lies to the E. of the Downs, about five miles from the South Foreland.

Gookin, Daniel, a major-general of Massachusetts, and author of the Historical Collections of the Indians in New England, was born in England, and, in the year 1621, emigrated to Virginia. He continued to reside in that province until 1644, when he removed with his family to New England, and settled in Cambridge, "that he might enjoy the ordinances of the gospel in their purity." He was there appointed superintendent of all the Indians who had submitted to the government of Massachusetts. In 1656, he went to England, and had an interview with Cromwell, who employed him to persuade the inhabitants of Massachusetts to remove to Jamaica. In 1665, he became very unpopular, in consequence of the support which he gave to the friendly Indians, against whom several severe laws had been passed, through apprehension that

they might join king Philip. His resistance, however, soon afterwards, to the attempts made to destroy the charter of Massachusetts, reinstated him in the confidence and favor of the people. In 1681, he was made major-general of the colony. He died in 1687, in the seventy-sixth year of his age. His principal work is called Historical Collections of the Indians, and was published in the first volume of the Collections of the Massachusetts Historical Society, in 1782. He also left, in manuscript, a history of New England.

Goose (*anas*). Those species of this genus which are generally known by the name of *ducks*, have been spoken of under that head. The common goose, whose domestication is much less ancient and complete than that of the common hen, is the *A. cinereus*, which, in its wild state, is gray, with an orange beak. Domestication has already induced innumerable varieties; this state has also greatly added to the fecundity of this bird. Three different broods can be obtained by taking away the first eggs, and hatching them under a hen. None of our domestic birds are so apt to bring forth monstrous productions as geese—a circumstance which has been attributed to the excessive fatness to which they are liable. The liver of a fat goose is often larger than all the other viscera, and was a dish in so great reputation among the epicures of Rome, that Pliny thought it deserved a serious discussion, to whom the honor of inventing so excellent a dish was due. They fed their geese on figs, to improve their relish, and were not ignorant that they fattened sooner in a dark room; but it was left for modern gastronomers to invent the barbarous method of nailing down their feet and putting out their eyes. There are six species of geese found in North America.—*The snow goose* (*A. hyperborea*). This species, which is called *red goose* on the sea coast, arrives in the Delaware from the north early in November, usually in considerable flocks. They make but a short stay on their first arrival, going further south; but, early in the spring, they are often very numerous about Reedy island. The snow goose is two feet eight inches in length, and its wings are five feet in extent. The bill of this bird is very curious, the edges having each twenty-three indentations, or strong teeth, on each side. The inside, or concavity, of the upper mandible, has also seven rows of strong, projecting teeth, and the tongue, which is horny at the extremity, is armed on each side with thirteen long and sharp bony teeth. The flesh of this species is excellent.—*Laughing goose* (*A. albifrons*). Body brownish; beneath white varied with black; bill and feet orange. This species inhabits the northern parts of both continents, and migrates to the more temperate climates during the winter, though it rarely comes as far south as the Middle States or Italy.—*Bean goose* (*A. segetum*). Dark cinereous; beneath whitish; folded wings longer than the tail; bill long, black and orange. This species is also common to both continents; in this country, it is scarcely ever seen as far south as the Northern States, though in Europe its migrations are more extensive. —*Canada goose* (*A. Canadensis*). Dark ash colored; head, neck and tail black; cheeks and throat white; bill and feet black. This is the common wild goose of the U. States, and is known in every part of the country. In their annual migrations to the north, it is the general opinion that they are on their way to the lakes to breed; but it is observed by Wilson, from whom the following account is condensed, that it is highly probable that they extend under the very pole itself, amid the silent desolation of unknown countries, shut out from the prying eye of man by everlasting and insuperable barriers of ice. After having fulfilled the great law of nature, the approaching rigors of that dreary climate oblige them to return towards the more genial regions of the south; and no sooner do they arrive among men, than an indiscriminate slaughter of them commences. The English at Hudson's bay greatly depend on these birds, and, in favorable seasons, kill three or four thousand, which are packed up for future use. The autumnal flight lasts from the middle of August to November; the vernal from the middle of April to the middle of May. The flight of the wild goose is heavy and laborious, generally in a straight line, or thus ≻; in both cases, an old gander always leads the van. The wild goose has often been domesticated, and it readily pairs with the common goose. The wild goose, when in good order, weighs from ten to twelve and sometimes fourteen pounds.—*A. leucopsis*. Dark cinereous; neck and tail black; face and beneath the breast white; bill and feet black. This species inhabits the arctic circle, migrating during the winter to more temperate regions; it is but seldom found within the limits of the U. States.—*Brant* (*A. bernicla*). Blackish ash-colored; the head, neck and breast black; a white patch on each side of the neck; beneath whitish; bill and feet black. The brant generally weighs about four

pounds, and measures two feet in length. It is often seen in our markets for sale. Its flesh, although esteemed by many, tastes somewhat sedgy. It is very common and numerous in the Middle States, during its double passage, when great havoc is made among its numbers.—There are several other species, which are, in all probability, accidental visitants of the U. States. These are, the gray goose (*A. cinereus*), dusky goose (*A. rufescens*), and the *A. medius*.

Gooseberry (*ribes uva crispa*); a low, branching shrub, growing wild in Siberia and the north of Europe. The branches are armed with numerous prickles, and bear small rounded 3 to 5 lobed leaves and inconspicuous flowers. The fruit, which is wild and sweet, attains a larger size and higher flavor in some of the cultivated varieties, which are very numerous, and have particularly attracted the attention of the English gardeners. Several species of gooseberry inhabit the northern and mountainous parts of the Union, one of which bears small purple berries of an agreeable flavor, and is not unfrequently met with in our gardens.

Goose-foot (*chenopodium*) is a genus of plants, containing 26 species, most of them indigenous to the temperate parts of the eastern continent. They are, with a few exceptions, annual, bearing alternate entire or dentate leaves, and small greenish flowers, which are disposed in axillary or terminal racemes. The calyx is five-parted, the seed solitary and lenticular; there are five stamens, two styles, and the corolla is wanting. Many of the species grow abundantly in waste places throughout Europe, and have been introduced into the U. States, where they are now common weeds in all cultivated grounds. The leaves of some make a good substitute for spinage, and the young shoots are sometimes eaten as asparagus. The *C. quinoa* of Chile is very celebrated in that country, and is carefully cultivated both for the leaves and seeds; the latter of which are used instead of millet, and, when mixed with it, yield an agreeable kind of beer. The Spaniards have taken great pains to introduce this plant into Europe, with every prospect of success. The *C. anthelminticum* is considered an excellent vermifuge.

Gorani, Joseph, count of, a political writer, was born at Milan, in 1740. He was descended from an ancient family. This learned and accomplished scholar belonged to a literary club, called the *Coffee House*, which carried on a correspondence with Voltaire, Diderot, D'Alembert and baron Holbach. Under the title of the Coffee House, he published a journal, in which political subjects were discussed. The club generally assembled at the house of count Verri, the author of Roman Nights. Among its members were Lambertenghi, the abbé Paul Frisi and the marquis Beccaria, who here projected the plan of his celebrated work on crimes and punishments. Joseph Baretti attacked the journal in a periodical work, *Frusta Letteraria*, or the Scourge. The club afterwards advocated the French revolution. Gorani was among the most zealous. In the works of his more mature years, on philosophy, political economy, and public education, he breathes a democratic spirit. The same is true of his Secret Memoirs of Italy (*Mémoires secrets et critiques sur les Cours d'Italie*, 3 vols., Paris, 1793); especially of his Memoirs of Naples, and his Treatise upon Despotism, and his Essay on the Science of Government. His love of freedom and equal rights, and his desire for the abolishment of the distinctions of birth, caused him to be struck from the list of the Milanese nobility, and his estates to be confiscated; in return for which, the national assembly conferred upon him the title of "a French citizen." Gorani went to France in 1792, and thence to Geneva in 1794.

Gordian Knot. (See *Alexander the Great*, and *Gordius*.)

Gordius, a peasant, was raised to the throne of Phrygia. An insurrection having broken out, the inhabitants consulted the oracle concerning a new king. It designated him, whom, on their return, they should meet, mounted on a chariot, going to the temple of Jupiter. This was Gordius, who, to evince his gratitude, consecrated his chariot to Jupiter, and fastened the pole with so ingenious a knot, that the oracle promised the dominion of the world to him who should untie it. He built the capital, Gordium. When Alexander came to Gordium, and saw the impossibility of untying the knot, he cut it with his sword.

Gordon, George, called, by courtesy, *lord George Gordon*, was the son of Cosmo George, duke of Gordon, in Scotland, and was born in 1750. He entered when young into the navy, but left the service during the American war. He then became a member of the house of commons. His parliamentary conduct was marked by a certain degree of eccentricity, but he displayed no deficiency of tal-

ent, often animadverting with great freedom on the ministers and their opponents. At length, in 1780, a bill having been introduced into the house for the relief of Roman Catholics from certain penalties and disabilities, he collected a mob, at the head of whom he marched to the house of commons, to present a petition against the proposed measure. The dreadful riot which ensued, and which was not suppressed till after the destruction of many Catholic chapels and dwellings, the prison of Newgate, and the house of the chief-justice, lord Mansfield, led to the arrest of lord George Gordon, and his trial on the charge of high treason; but, no evidence being adduced of treasonable design, he was acquitted. In May, 1786, he was excommunicated for refusing to come forward as a witness in a court of law. He then published a Letter from Lord G. Gordon to the Attorney-General of England, in which the Motives of his Lordship's public Conduct, from the Beginning of 1780 to the present Time, are vindicated (1787, 8vo.). In the beginning of 1788, having been twice convicted of libelling the French ambassador, the queen of France, and the criminal justice of his country, he retired to Holland, but he was arrested, sent home, and committed to Newgate, where he passed the remainder of his life. He died, Nov. 1, 1793, disturbed in his last moments by the knowledge that he could not be buried among the Jews, of whose religion he had become a zealous professor during his imprisonment.

Gordon, William, D. D., a historian of the American war, was born in England, where he became a clergyman, first at Ipswich, afterwards at Wapping. He emigrated to America, in 1770, and, July 6, 1772, was ordained minister of a church in Roxbury, Massachusetts. During the revolutionary war, he was warmly attached to the American cause, and for some time was chaplain to the provincial congress of the colony in which he lived. After peace had been made, he returned to his native country, and published his History of the United States of America (London, 1788). He died in England, on the 19th of October, 1807, having survived the complete extinction of his mental faculties.

Gore, Christopher, a governor of the state of Massachusetts, was born in Boston, in 1758, and was the son of a respectable mechanic, who acquired a considerable fortune by his industry. He was graduated at Harvard university, in 1776, when he commenced the study of the law, and soon acquired a lucrative practice. Before he had attained the age of 30, he was elected by the citizens of Boston, with Hancock and Samuel Adams, to the convention of the state, which adopted the federal constitution. In 1789, he was appointed by president Washington the first United States' attorney for the district of Massachusetts; the duties of which office, difficult as they were at that period of distraction and trouble, he continued to discharge with firmness and ability, until 1796, when he was appointed, by the president, colleague of the celebrated William Pinkney, in the commission under the fourth article of Jay's treaty, to settle the American claims upon England for spoliations. In this situation, he evinced his wonted energy and talent, and recovered property to a very great amount for his fellow citizens. When Rufus King, at that period American minister at London, and the intimate friend of Mr. Gore, returned to America in 1803, he left him *chargé d'affaires*. In 1804, he returned home, and was twice elected to the senate of the state from the county of Suffolk, and then to the house of representatives from Boston. In 1809, he was chosen governor of Massachusetts, but retained this dignity only for one year. In 1814, he was called to the senate of the Union, by the appointment of governor Strong, during a recess of the legislature. The appointment was ratified by the legislature at their ensuing meeting. He served in this capacity for three years, and then withdrew into a retirement, in which he ended his life, March 1, 1827, in the 69th year of his age. Mr. Gore possessed a clear, sound mind, with a firm and decided, yet liberal spirit. He was an excellent classical scholar, and was well versed in general literature. His manners were finished and graceful, and his person uncommonly fine.

Goree; a seaport, on an island of the same name, situated near the east coast, on a canal which communicates with the Meuse; formerly a place of considerable trade; but the harbor is now choked up with sand, though the road is still good; 6 miles west of Helvoetsluys; population, 694.

Goree; a small island, or rather rock, belonging to France, on the coast of Africa, a little more than a mile from the southern shore of the promontory that forms cape Verd; lon. 17° 25′ W.; lat. 14° 40′ N. It is of consequence only from its inaccessible situation, which renders it capable of being converted into a

strong military position. It is about two miles in circuit. It is composed of a basalt rock, which rises to the height of 300 feet, on the top of which is fort St. Michael. At the foot of the rock is the town of Goree, said to contain 5000 inhabitants. It is a busy place, and the entrepot of all the French trade on the opposite coast of Africa.

Gorgias, surnamed *Leontinus*, from Leontium in Sicily, was a learned orator and sophist, who flourished in the fifth century B. C. He is said to have been a disciple of Empedocles, and was one of the earliest writers on rhetoric. He displayed his eloquence at the Olympian and Pythian games, and made such an impression, that a golden statue was erected in his honor at Delphi. He was one of the first who introduced numbers into prose, and who treated of common-places, and showed the use of them for the invention of arguments; and, on this account, Plato gave the name of *Gorgias* to his elegant dialogue on this subject, which is still extant. Gorgias lived to the age of 107 or 108 years.

Gorgones; three celebrated sisters, daughters of Phorcys and Ceto. Their names are Stheno, Euryale and Medusa. They were all immortal, except Medusa. According to the mythologists, their hairs were entwined with serpents, their hands were of brass, their body was covered with impenetrable scales, their teeth were as long as the tusks of a wild boar, and they turned to stones all those on whom they fixed their eyes. Medusa alone had serpents in her hair, according to Ovid, and this proceeded from the resentment of Minerva, in whose temple Medusa had gratified the passions of Neptune, who was enamored of her on account of the beautiful color of her locks, which the goddess changed into serpents. Æschylus says, that they had only one tooth and one eye between them, of which they had the use, each in her turn; and, accordingly, it was at the time that they were exchanging the eye, that Perseus attacked them, and cut off Medusa's head. According to some authors, Perseus, when he went to the conquest of the Gorgons, was armed with an instrument like a scythe, by Mercury, and provided with a looking-glass by Minerva, besides winged shoes and a helmet of Pluto, which rendered all objects clearly visible and open to the view, while the person who wore it remained totally invisible. With weapons like these, Perseus obtained an easy victory, and, after his conquest, returned his arms to the different deities whose favors and assistance he had experienced. The head of Medusa remained in his hands, and after he had finished all his laborious expeditions, he gave it to Minerva, who placed it on her Ægis, with which she turned into stones all such as fixed their eyes upon it. It is said that, after the conquest of the Gorgons, Perseus took his flight in the air towards Æthiopia, and that the drops of blood which fell to the ground from Medusa's head were changed into serpents, which have ever since infested the sandy deserts of Libya. The horse Pegasus also arose from the blood of Medusa, as well as Chrysaor, with his golden sword. The residence of the Gorgons was beyond the ocean towards the west, according to Hesiod. Æschylus makes them inhabit the eastern parts of Scythia; and Ovid maintains, as the more received opinion, that they lived in the inland parts of Libya, near the lake of Triton, or the gardens of the Hesperides. Diodorus and others explain the fable of the Gorgons, by supposing that they were a warlike race of women near the Amazons, whom Perseus, with the help of a large army, totally destroyed.

Gorham, Nathaniel, was born in Charlestown, Mass., May 27, 1738, where, after receiving a good school education, he engaged in mercantile pursuits. In 1771, he was elected a representative of Charlestown in the legislature of the province, and was annually reëlected until the revolutionary war. He had much influence in this body. In 1779, he was chosen a delegate to the convention which formed the constitution of Massachusetts. He was also several years judge of the court of common pleas. In 1784, he was elected a member of congress, and was chosen by that body as their president. He was subsequently a member of the convention which formed the present constitution of the U. States, and of the state convention which adopted it. He died June 11, 1796.

Gorlitz; a town in the Prussian government of Liegnitz, province of Silesia, in Upper Lusatia, on the left bank of the Neisse; lon. 15° 31′ E.; lat. 51° 9′ N.; contains 9900 inhabitants. Its trade in linen and woollen cloth is considerable. Upon a hill, before the gate, is the holy sepulchre, which, in 1489, the burgomaster Emerich caused to be built after the model of that in Jerusalem, which he had twice visited. Here is the seat of the Upper Lusatian society of science. In the neighborhood is the Landskrone, a

conic mountain of granite and basalt, 1300 English feet high.

Gortz. (See *Gœrtz.*)

Goshawk (*falco palumbarius*, Lin.). This bird is common both to the old and the new continent. Wilson described the American bird, in his excellent work, under the name of *atricapillus*, but, at the same time, suspected that it might prove identical with the European. This was confirmed by Sabine. European naturalists have also added to the confusion, by describing it under the different names of *gallinarius*, *gentilis*, &c., according as it varied in plumage. The goshawk is 21 inches in length; the bill and cere are blue; crown, black, bordered on each side by a line of white, finely specked with black; upper parts, slate, tinged with brown; legs, feathered half way down, and, with the feet, yellow; tail feathers, with pale bands. The goshawk feeds on mice and small birds, and eagerly devours raw flesh. It plucks the birds very neatly, and tears them into pieces, before it eats them; but swallows the pieces entire. They are said to be used by the emperor of China, in his hunting excursions, when he is usually attended by his grand falconer, and a thousand of inferior rank. Every bird has a silver plate fastened to its foot, with the name of the falconer who has charge of it, that, in case it should be lost, it may be restored to the proper person. It was also used in Europe for the same purpose, in common with other kinds, as the *gerfalcon*, the *falcon*, the *lanner*, the *sacre*, the *merlin*, the *hobby*, and the *kestrel*, which were called *long-winged hawks*, in contradistinction to the goshawk, sparrowhawk, kite and buzzard, which are of shorter wing, and less courageous. (See *Falconry.*)

Goshen, in ancient geography; a district of Egypt, which Joseph procured for his father and brethren.

Gospel; a message of joy. This word is derived from *good* and *spell*, an old word signifying *tidings* (which would make *gospel* a literal translation of the Greek ευαγγελιον); or from *God* and *spell*, God's tidings. It is commonly applied to the Christian revelation, beginning with the glad tidings of the coming of the promised Messiah, at the birth of Christ, and also to the several histories of Jesus Christ, written by Mark, Luke, and the apostles Matthew and John. In the primitive church, those who travelled from one church to another, continuing the instructions of the apostles, were called *evangelists*, that is, gospellers, or preachers. More modern usage has limited this word to the above-mentioned authors of the life of Jesus Christ.

Gosport; a seaport town of England, in Hampshire. It is situated on a projecting point of land, at the western side of the entrance to Portsmouth harbor. On the S. W. is a commodious bay, called *Stoke's bay*. Numerous government works and magazines have been established here, for supplying the wants of the navy; extensive barracks, also, for the accommodation of the military. Gosport has, of late, been regularly fortified on the land side, by a line of bastions, redoubts, &c. Here is a large academy for the instruction of young men intended for the army and navy. To the south of the town stands Haslar royal hospital, for sick and wounded seamen, a magnificent building, capable of accommodating 2000 patients. Population, 6184. 1 mile N. W. Portsmouth. Lon. 1° 7′ W.; lat. 50° 47′ N.

Gossamer is the name of a fine filmy substance, like cobweb, which is seen to float in the air in clear days in autumn, and is most observable in stubble-fields, and upon furze and other low bushes. This is probably formed by the flying-spider, which, in traversing the air for food, shoots out these threads, which are borne down by the dew, &c.

Gossec, Francis Joseph, a composer, was born, 1733, at Vergnies, a village in Hainault. For eight years of his boyhood, he was attached to the choir in the cathedral at Antwerp. He never had any other teacher than the scores of great musicians. Like Haydn, he complained that he had no opportunity to see Italy, and the schools of that country. In 1751, he went to Paris, where he was leader of the orchestra of M. de la Popelinière, under the direction of the great Rameau. At a later period, he was employed in the same capacity in the orchestra of prince Condé, for whom he composed several operas. In 1770, he established a concert of amateurs, which became famous. In 1773, he took the direction of the *concert spirituel*, in connexion with Gaviniès and Le Duc, until, in 1777, he was excluded by an intrigue. In 1784, he became director of the singing school established by the baron de Breteuil. During the revolution, he became music-master of the national guard, and, in 1795, when the *conservatoire* (q. v.) was founded, he, with Méhul and Cherubini, became inspector of this establishment, and professor of composition. Catel, his most eminent pupil, received, at the same time, the

appointment of professor of harmony. Gossec, among other patriotic pieces, composed the hymn to reason, and that for the feast of the Supreme Being, the apotheosis of Voltaire, and the funeral of Mirabeau. Napoleon gave him the cross of the legion of honor. Gossec composed much for the opera. His best production is Sabinus (1773). He labored particularly in the sacred style. His requiem of 1760, and his oratorio *De la Nativité* are still esteemed. He wrote, in 1804, his *Méthode de Chant du Conservatoire*, and contributions, signed *D. C.*, for Catel's *Principes élémentaires de Musique suivis de Solfèges* (1800), a work to which also Cherubini, Méhul, Langlé and Lesueur contributed.

Gotha; a Saxon duchy, on the north side of the Thuringian forest. The rivers are the Gera, Werra, Unstrat and Ilm. The dominions of the duke of Saxe-Gotha consisted of the duchy of Gotha, and the greater part of the principality of Altenburg, and amounted to 1106 square miles, with 193,000 inhabitants, of which Gotha contained 615 square miles, with 84,000 inhabitants. The revenue amounted to 1,500,000 guilders; the debt, to 3,000,000 guilders. In 1825, Frederic IV, the last duke of Saxe-Gotha, died; and, according to the articles of partition of Nov. 5, 1826, the duchy of Gotha went to the duke of Saxe-Coburg, and the principality of Altenburg to the duke of Saxe-Hildburghausen, who is now styled *duke of Saxe-Altenburg*. The duchy of Gotha contains, at present, 582 square miles, with 83,000 inhabitants.

Gotha; capital of the duchy of Gotha, on the Leine, in a fine country, with 1340 houses and 13,000 inhabitants; lat. 50° 57′ 4″ N.; lon. 10° 43′ 1″ E. The museum, opened in 1824, contains 150,000 volumes, and many valuable manuscripts, a cabinet of coins (one of the best in Europe), with a fine numismatic library, the Oriental museum (of Seezen and Anthing), a museum of curiosities of nature and art, and a gallery of paintings, rich in the productions of the old German school. The seminary for teachers is the oldest in Germany. There is also a gymnasium, a Sunday school for apprentices and journeymen, and considerable manufactures and commerce. Near Gotha is situated the famous observatory on the Seeberg, erected by duke Ernest II, and endowed by him with 40,000 German dollars. When this institution was under the care of Von Zach and Von Lindenau, it was one of the first in Germany.

Gothard, St.; a high mountain of Switzerland, on the frontier of the cantons of Tessino and Uri, 21 leagues S. E. from Berne; lat. 46° 33′ N.; lon. 8° 30′ E. This mountain forms a remarkable point in the Alps, and unites the Lepontine chain and that of Berne. The Reuss and Tessino rise here; the Rhine and Rhone not far from it. Its highest points are covered with perpetual snow, as the Fieudo, 10,150 feet high, the Fibia and the Luzendro, 10,430 feet; the Orsivro, or Peak of Ursern, 10,600 feet; and the Prosa, 9800 feet above the level of the sea. They are mostly granite, and contain a great variety of minerals. There are many small lakes on the St. Gothard, and eight glaciers. A road traverses this body of mountains, connecting Germany and Italy. It existed as early as 1319, and gigantic obstacles were surmounted in its construction. It is mostly 10 feet wide, sometimes 15; part is well paved with granite. Bridges of surprising boldness lead over terrible precipices. In one place, a gallery has been cut through a rock, for the distance of more than 200 feet, and with a height and width of nearly 13 feet. It is called the *Urner Loch* (the hole of Uri). It was pierced in 1707, at the expense of the canton of Uri. The road is practicable in all seasons. In winter, the snow is sometimes 20 feet deep on the road, but the inhabitants of the neighboring villages are obliged to keep the passage clear; in consequence of which they take toll from passengers during this season. From 15,000 to 20,000 traders traverse the St. Gothard annually, besides the many travellers whom curiosity leads over this mountain. More than 400 inhabitants of the Levantine valley, and that of the Reuss, subsist by transporting merchandise and travellers, by means of mules. On the top of the St. Gothard is an inn, where formerly was the *hospice* of the Capuchins, with an hospital and room to store merchandise. This point is 6339 feet, or, according to the map of Weiss, 4566, above the surface of the sea. This group of mountains received its name from a bishop of Hildesheim, who lived in the 12th century. It was, in 1799, the theatre of several combats between the French and the Austrians, united with the Russians. Several works of great importance are still in progress on this mountain, the most remarkable of which is the road which traverses the Schällenen, in the canton of Uri. It is cut through enormous masses of granite, and the bridges are magnificent. 700 persons are employed in this work. (See *Alps, Roads over.*)

GOTHIC STYLE. (See *Architecture.*)

GOTHS (the *Gothones* of Tacitus, and *Gutones* of Pliny, but not the *Gothoni* of Tacitus, or *Rotini* of Dio, who were of Gallic origin); a German tribe, from the shores of the Baltic, between the Vistula and the Oder. Their language approaches very nearly to the ancient dialect of the Franks. Like all the Germans, they suffered their yellow hair to grow long, wore beards, and dressed in furs; but, contrary to the custom of the other Germans, the royal dignity among them was hereditary. They first appeared under the name of Goths, in 215. From this time, they filled all Europe with the fame of their exploits, for more than 500 years. Leaving their habitations on the Baltic, they removed to the regions adjoining the Black sea. Many other tribes were incorporated with them, and, by continual advances and conquests, they established, under Ermenric (about 350), the great Gothic kingdom, extending from the Don, which divides Europe from Asia, to the Theiss, which empties into the Danube, and from the Black sea to the Vistula and the Baltic. It embraced Thrace, Mœsia (Servia and Bulgaria), Dacia (part of Hungary, the Bannat, the Bukowina, Transylvania, Walachia, Moldavia to the Pruth), large districts of Poland, Russia and Prussia, and, in the north, comprised the Sclavonic, Finnish and Lettish tribes. This situation naturally brought the Goths into continual contact, on the west, with the Roman empire, and, on the east, with that of Constantinople; and history is full of the struggles which they maintained, sometimes on the one side, sometimes on the other. Two emperors fell in battle with them, and Rome and Constantinople were both forced to pay them tribute. They were the first of the nations beyond the Danube, that received Christianity. Ulphilas, bishop of the Mœsogoths (the Gothic tribes which inhabited Mœsia), as early as 360, invented a German alphabet, and translated the New Testament into the Gothic language. All the Goths, however, were not equally advanced with those of Mœsia, among whom civilization had made considerable progress, in consequence of their vicinity to the Greek empire, and continual intercourse with it. About the year 369, internal commotions produced the division of the great Gothic kingdom into the kingdom of the Ostrogoths (eastern Goths), on the shores of the Black sea, from the Don to the Dnieper, and the kingdom of the Visigoths (western Goths), or the Therungian state in Dacia, from the Dnieper to the Danube. These internal storms were soon followed by one from without, which effected the subversion of the Gothic power in those parts. About the year 375, vast multitudes of the Huns, and of the Alans, who had been subdued by them, poured out of Asia, and drove the Ostrogoths in upon the Visigoths. They sought and obtained permission from the emperor Valens to settle in Thrace, at that time lying desolate; but were soon driven to rebellion by the oppression of the imperial governor. In the war which ensued, Valens himself was completely defeated by them, at Adrianople, in 378, and, in his flight, burned in a cottage, which they set on fire. From that time, they had an important influence in the affairs of Constantinople. After many vicissitudes, the Ostrogoths also obtained a settlement in Pannonia and Sclavonia, but not till the destruction of the kingdom of the Huns, in 453. The Visigoths, in process of time, obtained a degree of power which excited alarm in Greece and Italy. In 396, Alaric made an irruption into Greece, laid waste the Peloponnesus, and became prefect of Illyria and king of the Visigoths. He invaded Italy about the beginning of the 5th century, and by that measure brought on the destruction of the Roman empire, since Stilicho, the Roman general, could only obtain a victory over Alaric, at Verona (in 403), by withdrawing all the Roman troops from the borders of the Rhine. Alaric himself soon returned to Italy, and sacked Rome in 409, and a second time in 410. After his death (in 410), the Visigoths succeeded in establishing a new kingdom in the southern parts of Gaul and Spain (*Septimania, Gothia*), of which, towards the end of the 5th century, Provence, Languedoc and Catalonia were the principal provinces, and Toulouse the seat of government. The last king, Roderic, died (in 711) in battle against the Moors, who had crossed from Africa, and subsequently conquered the kingdom. After the fall of the Western Roman empire (by the invasion of Odoacer, in 476), the Eastern emperor, Zeno, persuaded Theodoric, king of the Ostrogoths, to invade Italy, in 489. The Goth became king of Italy, in 493, and laid the foundation of a new Ostrogothic kingdom, which, together with Italy, comprised Rhætia (a part of Switzerland and the Tyrol), Vindelicia (part of Bavaria and Suabia), Noricum (Saltzburg, Stiria, Carinthia, Austria), Dalmatia, Pannonia (Farther Hungary, Sclavonia), and Dacia beyond the

Danube (Transylvania, Walachia). This kingdom came to an end in 554.—This people, so famous in history, was not destitute of science and learning, having maintained a connexion with the Eastern and Western Roman empires, long before their irruption into Italy. Theodoric, who was educated at Constantinople, was such a friend to the fine arts, that he established the office of a *comes nitentium rerum* (count of the arts, overseer of the works of art), whose business was to watch over the statues, to see that they were not injured or stolen; and appointed a public architect, who was intrusted with the preservation of the ancient edifices. He not only caused various public buildings at Rome to be repaired, but also adorned other cities with new edifices. (For information on the Gothic architecture, see *Architecture*. See Gibbon's *Decline and Fall;* also Manso's *Geschichte des Ostgothischen Reichs in Italien*—History of the Ostrogothic Kingdom in Italy; Breslau, 1824.)

Gottenburg (in Swedish, *Götheborg*); a large and thriving town in the southwest of Sweden, situated near the mouth of the large river called *Gotha-Elf*. It stands in a marshy plain, surrounded by precipitous ridges of naked rocks, rising to the height of from 100 to 300 feet, but intersected by several cultivated openings. The town is divided into Upper and Lower. The latter is perfectly level; the houses, owing to the marshiness of the ground, are all built upon piles. The principal street, called Great Harbor street, runs from E. to W., and divides the town into two nearly equal parts. The Upper town, from its situation, is built with less regularity; but it has an imposing appearance, the houses rising one above another, in the form of an amphitheatre. The only considerable public edifices of Gottenburg are, the exchange, the extensive buildings belonging to the East India company, an hospital, and a magnificent church, built since 1812, with stones from Scotland. The only curiosities of the place are a few private collections of paintings. The harbor is commodious for vessels of moderate size, and has a fort on a small, rocky island, to defend the entrance. It has manufactures of coarse linen and woollen stuffs, leather, sail-cloth, ropes, some silk and cotton goods, soap, tobacco; also sugar refineries. Iron and steel, furnished by the rich mines of Warmeland, form the principal articles of export; and, after these, herrings, linen, timber, tar, train oil and alum. Here is a large provincial school, a mercantile academy, and an academy of sciences and literature, incorporated in 1775. The English language is pretty generally spoken here, the merchants being, many of them, English. Few places have suffered more from fire. The canal of Trolhätta (see *Canals*) promotes the commerce with the inner country. Gottenburg was founded by Charles IX, in 1607. Population, 24,000. Lon. 11° 57′ 45″ E.; lat. 57° 42′ 4″ N.

Gottingen; a city in the kingdom of Hanover, on the Leine; 22 leagues S. S. E. of Hanover, 8½ leagues N. E. of Cassel; lat. 51° 31′ 49″ N.; lon. 9° 51′ 45″ E.; in a fertile valley, in the former principality of Kalenburg, now in the principality of Göttingen. Population, 10,000. There are manufactories of cloth, hosiery, linen, &c. The sausages of Göttingen are celebrated among epicures. King George II founded here, in 1734, the university of Georgia Augusta, which was opened in 1735, and dedicated Sept. 17, 1737. It is at present, also, the national university of Brunswick and Nassau; that is to say, every native of these latter countries must study, for a certain time, at Göttingen, if he wishes an employment in the gift of either government. The library of the university, the richest collection of modern literature in Germany, and perhaps in Europe, contains 300,000 volumes and 5000 manuscripts. In 1751, the royal society of sciences was established, and remodelled in 1770. It comprises mathematical, physical and historical classes; has members ordinary and extraordinary, resident and foreign, and holds a session monthly. The different classes propose, alternately, a prize of 50 ducats for the best treatises on certain subjects. In 1773, a museum was established, which, together with a cabinet of medals, contains a collection of specimens in natural history, and a considerable collection of models of various sorts, besides paintings, engravings, &c. Since 1784, each of the four faculties has proposed, annually, a prize question, for the students at Göttingen. The prize consists of a gold medal, of the value of 25 ducats. There are also a seminary for preachers, a divinity college and a pastoral institute, a clinical institute, a surgical and a lying-in hospital, an anatomical theatre, a botanical garden, a horticultural garden, a chemical laboratory, a collection of philosophical instruments, an observatory, a philological seminary, &c. In 1829, there were 1264 students at Göttingen, and 89 teachers proposed courses of lectures. In

the summer of 1825, it counted 1545 students. Several of the first German periodicals are published at Göttingen. The universities of Berlin and Göttingen are the most distinguished in Germany. Blumenbach, Eichhorn, Gauss, &c., are among the professors.

GOTTORP. (See *Holstein.*)

GOTTSCHED, John Christopher, born in 1700, at Juditenkirch, near Königsberg, in Prussia, received from his father, who was a preacher there, his first instructions in the languages and the sciences, and entered the university of Königsberg as early as 1714. His inclination soon turned from theology, to which he had been destined, to philosophy, the belles-lettres, and the languages. In 1724, he went to Leipsic, and delivered lectures on the belles-lettres, in which he attacked the then prevalent corruption of taste produced by the bombast of Lohenstein and his followers, and recommended the imitation of the ancients, and their professed followers, the French. In 1728, he published the first sketch of his Rhetoric, which he afterwards much enlarged, and, in 1729, for the first time, his *Kritische Dichtkunst* (Critical Art of Poetry.) Both these works, unlike the books of instruction then in general use in Germany, condemn the disfigurement of the language by the use of foreign words, and oppose the taste for bombast in poetry, which then prevailed. In 1730, he was made professor of philosophy and poetry, published his Contributions towards a critical History of the German Language, Poetry and Eloquence, and began his profitless exertions in behalf of the national drama. In 1734, he became professor of logic and metaphysics, and subsequently published his *Ersten Gründe der Weltweisheit* (First Principles of Philosophy). He died in 1766. Gottsched is an example of the degree to which a writer may sink by partiality and pedantry, even when his intentions are laudable and his merit considerable. These qualities have procured for him the reputation of a teacher of bad taste and false philosophy. The good effected by Gottsched is as apparent as his absurdity. His zeal for the purity of the German language was of great use, and he at least perceived its genius, although he did not possess sufficient talents to exhibit its power in his own productions. This is his chief merit. He was by no means suited for a reformer of the German drama. He wished to extirpate the opera and comic opera, and to refine comedy by expelling from the stage the Merry Andrew, the amusing favorite of the multitude. He was even cruel enough, in conjunction with the stage-manager Neuber, to bury that honorable personage publicly, and with festive solemnities, in 1737. The pieces which he himself prepared for the stage were stiff and prosing.

GOUDA, or TERGOUW; a city of the Netherlands, in New Holland, on a branch of the Rhine, called *Issel*, where it receives the river Gouw, which gives it its name; 9 miles north-east of Rotterdam, 22 south of Amsterdam; lon. 4° 43′ E.; lat. 50° N.; population, 11,379. It has extensive manufactures of tobacco pipes, also of porcelain, with a commodious port and a brisk trade, having boats passing regularly to Amsterdam, Hague, Rotterdam, Utrecht, &c. The great church is one of the handsomest and largest in the country, and is particularly celebrated for its painted glass windows, supposed to be the finest of the kind in Europe, and preserved with great care.

GOUGE; an instrument or tool used by divers artificers, being a sort of round hollow chisel for cutting holes, &c. either in wood or stone.

GOURD (*lagenaria vulgaris*), called also *calabash*, is a climbing plant, allied to the cucumber, melon, squash, &c., and belonging to the same natural family, *cucurbitaceæ*. The leaves are rounded, softly pubescent, and slightly viscous; the flowers, white, widely spreading, and somewhat stellated; the seeds, gray, with a tumid margin notched at the summit; the fruit, large, varying much in shape in different varieties, and has a hard and almost ligneous shell, of which, drinking cups, bottles, and other household utensils are made. The gourd was known to the ancients, having been cultivated from time immemorial in the warmer parts of Asia and Africa, and also by the aborigines of America, previous to the discovery by the Europeans. The pulp is edible, and the lower classes in Egypt and Arabia boil it in vinegar, or make it into a sort of pudding by filling the shell with rice and meat.

GOURGAUD, Gaspard, baron de, adjutant-general of the emperor Napoleon, and one of his companions at St. Helena, was born in 1783, at Versailles, of a family of citizens. He was educated at the polytechnic school, and went as teacher of fortification to the military school at Chartres, and afterwards to that at Metz. In 1801, he entered the sixth regiment of flying artillery, and was associated with the general of artillery, Foucher. In the

campaign of 1805, he distinguished himself, under Lannes, at the capture of the bridge over the Danube near Vienna, and at Austerlitz, where he was wounded. He also acquired distinction at Jena in 1806, in Poland in 1807, at the siege of Saragossa in 1808, and, in 1809, in the battles of Abensberg, Eckmühl, Ratisbon, Ebersberg, Esslingen and Wagram. After the peace, he was made director of the armory at Versailles, and introduced some improvements in the preparation of lances and muskets. After that, he was sent to Dantzic, to examine the strength of the place, with a view to the event of a war with Russia, and to cause a quantity of materials for a siege, and the construction of bridges, to be privately prepared. His official reports in relation to this business procured for him the especial favor of the emperor. Later services procured him the rank of nobility in 1812, with 2000 francs yearly income. After the campaign in Russia, in which Gourgaud was present at almost every skirmish and battle, Napoleon made him a baron. In the retreat, Gourgaud twice swam his horse across the Berezina, in order to superintend the erection of a bridge. In 1813, he took a share in the battles of Lützen and Bautzen, and was intrusted with the superintendence of the artillery corps, during the armistice. His report to the emperor on the tenability of Dresden, made August 24, was the cause of Napoleon's hastening directly to the capital of Saxony, instead of pressing upon the rear of the allies at Königstein. A further dotation of 6000 francs, and the cross of the legion of honor, were the reward of his activity. After the defeat of the French at Leipsic, the emperor gave him in charge to break down the bridge of Freyburg at night-fall. He delayed the execution of this order till daybreak the next morning, and by that means saved the corps of marshal Oudinot. In the retreat to France, the emperor employed him particularly in the reörganization of the army. After the battle of Brienne, he saved the life of the emperor, by shooting, with a pistol, a Cossack, who, with some of his comrades, had come unperceived upon the rear of the army, and was on the point of striking down Napoleon. For this act the emperor presented Gourgaud with a sword which he had worn in his campaign in Italy. He subsequently distinguished himself in the battles of Nangis, Laon and Rheims, on which account Napoleon appointed him colonel and commandant of the legion of honor. When Napoleon abdicated the imperial dignity, he set apart for colonel Gourgaud, who had remained true to him to the last moment, the sum of 50,000 francs, from his privy purse; but neither Gourgaud nor the others on whom Napoleon had conferred similar marks of favor, ever received this money, although the payment of it was stipulated in the act of abdication. When Napoleon left France for Elba, Gourgaud returned to Paris, where he received the cross of St. Louis from the duke d'Angoulême. He was also placed at the head of the staff-major of the first military division. In the events of March, 1815, he remained faithful to the Bourbons, until their flight, when he went over to Napoleon, whom he never afterwards forsook. After the battle of Ligny, the emperor appointed him adjutant-general, and at the battle of Waterloo he was among the last to retreat. After this, he followed his master to Malmaison, and subsequently to Rochefort, whence he was despatched by the emperor, July 14, with the well-known letter to the prince regent of England. Gourgaud obtained permission to accompany the emperor to St. Helena. He remained three years on that desolate island, when a protracted illness rendered it necessary for him to leave it, his physician assuring him that he could only expect to recover his health in Europe. He therefore went to England, whence he wrote to the assembled monarchs at Aix-la-Chapelle, and, on August the 25th, 1818, to the empress Maria Louisa, representing the miserable situation of the emperor. He subsequently published an account of the battle of Waterloo, by which both the duke of Wellington and the English ministry felt themselves injured. He was arrested, his papers seized, and himself sent in the most helpless condition to Cuxhaven. He then wandered about for some years. In March, 1821, his mother obtained permission for him to return. On the intelligence of the death of Napoleon, general Gourgaud, in conjunction with others, presented a petition to the chamber, that France might be allowed to bring back his remains, but the petition was ineffectual. He was struck from the army-list during his residence at St. Helena, but the generosity of his imperial friend made him independent by a legacy. Gourgaud married the daughter of count Roederer, formerly a member of the convention, and since a senator. He is occupied in preparing, from his recollections, and the information and documents imparted to him by Napoleon, a

History of the Campaigns of the Emperor. He has published several volumes of *Mémoires de Napoléon*, after Napoleon's own dictation (London, 1823). In 1825, he wrote an *Examen Critique*, &c., in reply to Ségur's work on the campaign of Napoleon and the grand army in Russia, which resulted in a duel with Ségur. Lieutenant-general count Partonneaux has contradicted both Ségur and Gourgaud in many particulars, in his *Campagne de Russie, la 12me Division de la Grande Armée, 9me Corps à Borissow le 27 et 28 Novembre*, 1812.

Gout, or Arthritis, a disease of adults, is sometimes regular, attended with the secretion of the superfluous earthy matter, which is no longer necessary for the formation of the bones; sometimes irregular, when the vital powers are weakened, and the superfluous bony matter, instead of being carried off by the organs of secretion, is deposited beneath the skin, or accumulates internally, thus producing chalk-stones and various internal concretions. There are two principal causes of the gout—bad diet and suppression of perspiration. Frequent use of wine, in particular of acid wines, as well as the daily use of very nourishing, fat, and high-seasoned food, contributes chiefly to the production of the disease, both from the excess of nutritive and earthy matter, and from its exciting effects on the blood; since so great a quantity of nutritive matter is not required by the fully developed body, and is not assimilated by the weakened organs of digestion. The disease, in these cases of undiminished vital powers, is called *podagra*, and returns at regular periods. (See *Podagra*.) In spring, in autumn, and with many much oftener, violent pains are felt in or near the joint of the great toe; the part becomes inflamed, red and swollen. A fever is usually connected with it, if the local inflammation reäcts upon the whole system of the blood. Among the poorer classes, who earn their bread with the sweat of their brows, and satisfy their thirst with water, the real gout is seldom met with; yet even among these, overloading the stomach with poor and badly cooked food, repeated exposure to cold, an accumulation of half-assimilated matter in the blood, and suppressed secretion, sometimes produce irregular gouty attacks, wandering pains, depositions of an extraordinary quantity of earthy matter in the limbs, and striking deformities. Gout or arthritis and rheumatism (q. v.) are frequently confounded, but they are very different in their nature. Rheumatism attacks every age of life; gout only adults. Rheumatism is an inflammatory state of the system of muscles and tendons; in the gout, this inflammation is in the joints, the capsular ligaments and the bones. Accordingly, in the former, the pain is rather seated in the muscles, spreads according to their course, and is more changeable, in respect to place; in the latter, the pains are in the joints and along the bones. Rheumatism is not accompanied with those earthy tumors and accumulations, which characterize the gout. In the latter disease, the sweat sometimes leaves a fine earthy dust upon the skin of the patient. Both diseases may, however, be present in the body at the same time, and be combined with each other. Rheumatism may also change, with time, into the gout, if, with the advancing age, the disease passes from the muscular system to the bones and joints. If nature is no longer vigorous enough to form a regular eruption of the gout, if the individual is old, or the disease is checked in its course, it often attacks the internal parts, the stomach, the lungs, the brain, and may thus prove fatal. Respecting the treatment of gout, the diet which is to be observed, &c., many erroneous opinions still prevail. Some believe that, particularly in the podagra, no remedy ought to be taken; others trust entirely to purgatives; others seek a remedy in abstinence and drinking water; others, misled by the theory of Brown, who placed the podagra entirely in the class of asthenic diseases, seek for a remedy in strong liquors. There is, however, no specific against gout. The treatment of the disease must be regulated by the judgment of a cautious physician, who carefully observes the age and the bodily constitution of the patient, his habits, the condition of the vital powers, the state of his arterial system, and the peculiar nature of the case. With one arthritic patient, for instance, bleeding, drinking of water, and the use of cooling means, may be very necessary, which, with another, may become injurious, nay, fatal; as may be the case, on the other hand, with exciting, diaphoretic and other means.

Government, Forms of. (See *Political Institutions*.)

Governor; a contrivance for equalizing the motion of mills and machinery. When any part of the machinery of a mill is suddenly stopped, or suddenly set agoing, and the moving power remains the same, an alteration in the velocity of the mill will take place; and it will move

faster or slower. Every machine having a certain velocity at which it will work to more advantage than at any other, the change of velocity arising from the foregoing cause, is in all cases a disadvantage, and in delicate operations exceedingly hurtful. In a cotton-mill, for instance, which is calculated to move the spindles at a certain rate, if from any cause the velocity is increased, a loss of work immediately takes place, and an increase of waste from the breaking of threads, &c.; on the other hand, there must be an evident loss from the machinery moving slower than is necessary. Various contrivances are used for remedying this evil.

Gower, John; an ancient English poet of the 14th century. He was liberally educated, and was a member of the society of the Inner Temple; and some have asserted that he became chief-justice of the common pleas; but the more general opinion is, that the judge was another person of the same name. He particularly attached himself to Thomas of Woodstock, duke of Gloucester, uncle to Richard II, and wrote his principal work at the desire of that unfortunate monarch. He appears to have been in affluent circumstances, as he contributed largely to the building of the conventual church of St. Mary Overy, in Southwark. He died at an advanced age, in 1402. He was buried in the church to which he was a benefactor, where his tomb is still to be seen. Gower abounded in the learning of the age, but has little claim to genius or invention; and is so uniformly grave and sententious, even upon topics which might inspire vivacity, that his friend Chaucer styles him "the moral Gower." He was author of a tripartite work, entitled *Speculum Meditantis; Vox Clamantis*, and *Confessio Amantis*; of which the first is a moral tract relative to the conjugal duties, written in French rhymes; the second a metrical chronicle of the insurrection of the commons under Richard II, in elegiac verse, and the third an English poem in eight books, relative to the morals and metaphysics of love, which alone has been printed, and was one of the earliest products of the English press, being printed by Caxton in 1483. The language is tolerably perspicuous, and the versification often harmonious.

Goyas; one of the capitanias of Brazil, which extends from 42° to 54° W. lon., and from 6° 30′ to 19° S. lat. Chief town, Villa Boa. Population estimated at 170,000. The chief business is searching for gold in the mines, which were first discovered in the year 1726.

Gracchus, Tiberius Sempronius, and Caius; two Romans, who, by undertaking to reform the republic, and to place the national welfare upon a firm basis, awakened popular commotions in Rome, of which they themselves became the victims. Tiberius Sempronius, who was about nine years older than his brother, was a man of great talents and distinguished merit. Both he and his brother, having lost their father early, received from their excellent mother, Cornelia, the daughter of the great Scipio the elder, a careful education. At a more advanced age, their minds were formed and ennobled by the Greek philosophy. Their family was among the most distinguished in Rome. Tiberius early made himself conspicuous in the military service. Under the command of his brother-in-law, the younger Scipio, he served at the siege of Carthage, and was the first man who mounted the walls of the burning city. While he was yet a mere youth, he was received into the college of augurs—an honor usually conferred only upon distinguished statesmen. He was subsequently questor to the consul Mancinus, who at that time waged war against the Numantines, in Spain—few in number, but brave, and attached to their liberty. Here the high character of the young Gracchus, even with the enemies of Rome, enabled him to conclude a treaty with the Numantines, which, without being disgraceful to the Romans, secured to the Numantines their independence. The Numantines even returned to the questor his accounts and papers, which they had taken among the Roman baggage, with touching marks of their esteem. But the Roman senate refused to ratify this treaty, and, to atone in some measure for this breach of the law of nations, decreed that all who had been concerned in its negotiation should be delivered up to the Numantines. They also sent the younger Scipio, with a new army, against Numantia. The high character which Gracchus had already obtained, delivered him from the ignominious treatment contemplated in the decree; and, finally, only Mancinus was given up, and even he was dismissed uninjured by the Numantines. This transaction gave a direction to the whole political life of Gracchus, and tended much to make him an opponent of the senate, and a supporter of the cause of the people. He offered himself as a candidate for the tribuneship of the people, which office rendered his person inviola-

ble so long as he was invested with it, and placed him in a situation to advance his great plans for the improvement of the condition of the people in a legal way. The poverty of the greater part of the sovereign people of Rome, which he had particularly noticed in his last journey from the province to the capital, inspired him with the design of increasing the number of landed proprietors in Italy, and thereby applying a remedy to the poverty of the mass of the people, and the greatest evils under which the republic suffered. As the Romans were not fond of innovations, he sought to obtain his object by the revival of an old law, passed 232 years before, but long forgotten. At that time it had been decreed, on the proposition of the tribune of the people, Licinius Stolo, after violent contentions on the subject, "that no one should possess more than 500 acres (*jugera*, each 28,000 square feet) of the public domains (*ager publicus*), and that the overplus should be equally divided among the plebeians." This law, which was now called, after Gracchus, the *Sempronian*, or, by way of eminence, the *agrarian law*, he revived, but with the introduction of several softening clauses. The possessors of surplus land were to receive compensation for the buildings erected on it and other improvements; every son who was of age might possess the whole quantity allowed by law to a citizen and householder; and every son under age might possess half that quantity (250 *jugera*). Nevertheless, the proposition of Sempronius was met with the most determined opposition by the ruling party, the nobles or patricians. Besides, the Italian nations were also injured by it. They had, since their submission, under the name of *allies of the Roman people*, contributed greatly to the advancement of the Roman power, by their supplies of money and troops; and they had, under various titles, acquired rights to many tracts of the Roman public lands. It is probable that Tiberius promised, by way of indemnification, to some of them, especially the Latins, the rights of Roman citizenship; and to all, better protection against the extortions of the Roman magistrates. To counteract his plans, the senate gained over one of the tribunes of the people, Marcus Octavius, a young, rich and daring man; and when Tiberius, after having, according to custom, exposed his law nineteen days to the public view, proceeded to take the votes of the assembled people upon it, Octavius interposed with his veto, and thus seemed at once to have defeated the whole undertaking. Tiberius now exerted all the prerogative of his office, sealed up the treasury, and forbade all the authorities the discharge of their several offices. He saw, however, that this was of no service to his plan. He therefore took a step till then unheard of in Roman history. At the next assembly of the people, he proposed the expulsion of Octavius from his office, as faithless to the cause of the people. Seventeen of the thirty-five tribes had already voted for his expulsion, when Tiberius approached Octavius (who had been the friend of his youth), and begged and adjured him to withdraw his veto. Octavius bade him proceed in taking the votes; and hardly had the next tribe given their voice for his expulsion, when the infuriated populace rushed upon him, he having now lost the inviolability of his person with his office. The exertions of Tiberius, who spared no pains to moderate the fury of the people; the fidelity of a slave, who sacrificed himself for him; and the efforts of the aristocratic party, were scarcely able to save his life. The same assembly passed the law of Tiberius, and three commissioners were appointed to carry it into execution, namely, Tiberius himself, his brother Caius, and his father-in-law, Appius Claudius. All the difficulties which stood in the way of the law, now appeared in their full light. Even the preparatory business of ascertaining which was public land, and which private property, was found to have its full share. Outcries and complaints were made from every part of Italy. Thus the popularity of Tiberius began to sink; and his adversaries did not remain inactive. Things were in such a state, when August of the year 620 U. C. came on, in which the tribunes for the following year were to be elected; and Tiberius, who had endeavored to regain the favor of the people by some new propositions, offered himself again, as candidate for the office. The aristocrats used every effort to prevent his election, and the ferment in Rome was carried to the highest pitch. One election day went by without any election being made. On the next, a vast multitude beset the forum, and the senate assembled in the neighboring temple of Faith (*Fides*). Tiberius strove in vain to speak to the raging populace. To express to them that his life was in danger, he touched his head. Immediately his enemies exclaimed, that he sought a diadem. The accusation was groundless, almost ridiculous; but what

will not passion believe, when a hated enemy is the object? Scipio Nasica, a member of one of the most distinguished families, who had been consul,—a great land-owner and a violent aristocrat,—arose, and called upon the consuls to use force. When they refused, he called out, irritated to fury, "Whoever loves the republic, let him follow me," and, with his followers, rushed from the curia in haste. A great multitude, consisting principally of senators and persons who had been magistrates, armed themselves with clubs and similar weapons, and made an onset upon the people, who, more out of respect for their dignity than in fear, gave way before them, few making any attempt to defend themselves. In the tumult which followed, Tiberius himself, with 300 of his followers, was slain. But this first shedding of the blood of citizens was not sufficient to allay the ferment which had been excited. A democratic party was formed in opposition to the senate, and considered itself justified in proceeding to extremities. The boldest speakers pressed into the tribuneship, and disguised their ambitious projects under the revered name of Gracchus. In this way, the tribune of the people, Carbo, two years after the death of Tiberius, disturbed the quiet of the state with new propositions. He subsequently rejoined the aristocratic party. Another principal man among the people, Fulvius Flaccus, even became consul, and, while in that high office, would have excited great troubles, by the large promises which he made to the allies, had not the senate given him a command in Gaul. The execution of the Sempronian law, too, which still continued, the law being in no way affected by the death of Tiberius, afforded continual occasion for fresh commotions. The place of the murdered Tiberius was filled by Licinius Crassus, father-in-law of Caius Gracchus; and, on his death, Carbo, Fulvius Flaccus and Caius Gracchus, constituted the committee appointed for the enforcement of the law. In this way, the parties had struggled with various success, when, 10 years after the death of his brother Tiberius (year of Rome 630), the younger Gracchus obtained the tribuneship. With more various and shining talents than his brother, he united a stormy eloquence, which carried away his hearers. In the discharge of his office as tribune, he, first of all, renewed his brother's law, and revenged his memory by expelling many of his most violent enemies from the city. At the same time, he carried through a law, "that monthly distributions of a certain quantity of corn should be made to the poor in Rome," and, by another law, effected some alleviations in the rigor of the military service, and ensured for the soldiers clothing, besides their pay. He also caused some additional highways to be run through Italy. The people were animated with an unlimited enthusiasm for their favorite; his enemies were terrified and weakened; hence he obtained the renewal of his office for the following year with ease. His attempt to introduce three hundred knights into the senate failed; but on the other hand, at his proposal, the administration of justice was taken from the senate, and transferred to the equestrian order. This gave rise to a new political power in the Roman commonwealth, which, holding a station intermediate between the senate and the people, had a most powerful influence in its subsequent history. The senate now resorted to a new, but sure, means of destroying Caius. Livius Drusus, a tribune gained over to their interests, had the art to withdraw the affections of the populace from Caius by making greater promises to them, and thus obtained a superior popularity for himself and the senate. Hence it resulted that Caius did not obtain a third tribuneship, and Opimius, one of his bitterest enemies, was chosen to the consulate. A tumult, in which a lictor of Opimius was killed, gave the senate a pretence for empowering the consuls to take strong measures. A proposition, which Opimius made to the people, for the repeal of a law of Gracchus (it only related to a colony which he had procured to be decreed, but it was used as a test of the repeal of all the laws which had been passed by the Gracchi), increased the ferment. Gracchus appeared upon the forum, and Flaccus had his followers armed. Upon this, Opimius made an attack upon the people with a well armed band of disciplined soldiers. Nearly 3000 were slain, and Gracchus himself, although bravely defended by some faithful friends, fell a sacrifice to the rage of his enemy. The agrarian law was some time after repealed; but the reverence of the people for the senate was destroyed. (See H. K. Reiff's *Geschichte der Römischen Bürgerkriege vom Anfang der Gracchischen Unruhen bis zur Alleinherrschaft des Augustus*—History of the Roman civil Wars from the Beginning of the Disturbances by the Gracchi, till the Reign of Augustus,—printed at Berlin, 1825.)

GRACE, in the general acceptation of the term, is the gratuitous favor of the powerful towards the weak. In theology, it is the disposition with which God communicates his benefits to us; and, in its restricted sense, the inclination and efficiency which he evinces for our recovery and salvation. Before the 5th century, little attention was paid to the dogmatic question of grace and its effects. It had merely been occasionally hinted at by the fathers of the Greek church. Pelagius, a native of Britain, having used some free expressions, which seemed to attribute too little to the assistance of divine grace in the renovation of the heart of man, and too much to his own ability to do good, Augustine undertook an accurate investigation of this doctrine, with a zeal congenial to his ardent nature. He said that "man is by nature corrupt, and incapable of any good, and absolutely unable to do any thing for his own renovation; that, as he cannot even will that which is good, every thing must be effected by the internal operation of grace upon the heart." Hence, to be consistent with himself, he came to the opinion, which has since been so much discussed, that God, of his own free will, has foreordained some to eternal felicity, and others to irrevocable and eternal misery; that, in consequence of this decision, all children that die unbaptized, and even those among the baptized, not ordained to eternal life before they die, although they have committed no actual sin, are condemned without hope of deliverance; but that no one on earth knows who, of professed Christians, have been elected or who have been reprobated, and every one ought to give himself up to the inscrutable will of God. From this view of Augustine, and the construction put upon a few passages of Scripture, originated the ecclesiastical dogma concerning predestination, which, among teachers of religion in the church, from the 5th century to the times of the reformation, and subsequently, has been a subject of warm discussion. The majority of those who called themselves Catholic or Orthodox, coincided with Augustine, and, with him, pronounced the Pelagians heretics, without accurately examining how far his opinion was founded on the Scriptures, which he himself was unable to read in the original. But even learned men, of later times, who excelled him in this respect, have been captivated by his philosophical acuteness, and his great adroitness at interpreting passages so as to support his opinion, by the force of his reasoning, and his overpowering eloquence. We may, therefore, justly call him the leader of the long succession of Western theologians, who, by their unyielding perseverance in the Augustinian doctrines concerning an unconditional election, have created as much confusion in moral philosophy as dissension in the church. Many, however, especially the French theologians, perceived that Augustine had gone too far, and followed the example of the abbot Cassianus of Marseilles, who, in a book written about the year 420, had adopted a middle course, in order to reconcile the operations of grace and free will in man's renovation, by a milder and more scriptural mode. He considered the predestination of God, in respect to man's salvation, as a conditional one, resting upon his own conduct. His followers were named *semi* or *half-Pelagians*, though the Catholic church did not immediately declare them heretics, as this church left the doctrine of predestination in the main undetermined. Subsequently, the singular spectacle of a gradual change of sides was exhibited. On account of the increasing ignorance of the clergy, the doctrines of Augustine, concerning an unconditional and particular election, fell into oblivion, notwithstanding the reverence paid that saint; and therefore it was not difficult for the scholastic theology of the middle ages so to pervert him, that he should appear easily reconciled to the Pelagians. As early as 848, Gottschalk, a fugitive monk of Fulda, was pronounced a heretic by the synod at Mentz, on account of his adherence to the Augustinian dogma, and condemned to prison for life. At the disputation which the Catholic doctor Eckius held with Martin Luther's friend Karlstadt, in 1519, at Leipsic, the latter defended the opinion of Augustine concerning divine grace, while Eckius opposed to him the views of saint Thomas Aquinas, which, at the least, must be called *semi-Pelagian*. The Lutherans, in the mean time, approximated to the Catholics with respect to this doctrine; while Calvin and Beza, and the great body of Calvinists, returned to the fundamental principles of Augustine, and made an unconditional divine predestination for the salvation of some men, and the damnation of others, an essential part of the creed of the reformed church. The evangelical Lutherans, on the other hand, in their form of concord, admitted that God had ordained all men to eternal felicity, but knew beforehand who of them would render themselves unworthy of it, and, conse-

quently, that election concerned only really good men, and would be the cause of their salvation. In the mean time, however, the Catholics had not come to an agreement concerning this dogma. This appears from the quarrels of the Dominicans and Jesuits, the latter of whom, on account of their moderate views of the doctrine of election and the power of free will, were charged by the former with Pelagianism. This was particularly the case with the Jesuit Lewis Molina, in 1588, from whom the Molinistic disputes in the Netherlands received their name. In the 17th century, also, two new parties, which had their origin in the dispute concerning the doctrine of predestination, sprung up in the Netherlands, namely, the Arminians (q. v.), or Remonstrants, among the Protestants, and the Jansenists among the Catholics. The former held to a universal and conditional divine predestination for the salvation of all men, in opposition to the strict Calvinistic party, from whom, in 1610, they formally separated themselves. The latter, in consequence of the revival of the Augustinian system of doctrines by bishop Jansen (who died in 1638), in a dispute with the Catholic church, which was then under the influence of moderate Jesuits, adopted the idea of a twofold and absolute divine predestination for the salvation and damnation of men. From that time, the members of the Christian church have continued to differ upon this subject. Since the middle of the last century, in Germany, the doctrine of predestination has lost much ground, very few Calvinists there believing in it; so that a union was easily brought about in Prussia, between the Lutherans and Calvinists, who now form together the *evangelical church*, so called. (See *Evangelical.*) The general belief in that country is, that God has absolutely excluded none, who sincerely repent, from the salvation obtained through Christ. Hence it depends altogether upon the faith and moral worth of the man, whether he is to be reckoned among the elect or the reprobate. Schleiermacher's treatise upon election, in his theological journal (*Theol. Zeitschrift*, 1 *Bd.* 1 *Hft.*), has lately excited great interest relative to this subject.

Grace, Days of; three days immediately following the time of payment of a bill, within which the creditor must protest, if payment is not obtained, in order to entitle him to recover the amount by legal proceedings against the drawer, accepter, and indorser—one or all.

Graces (*Gratiæ* and *Charites*); the goddesses of grace, from whom, according to Pindar, comes every thing beautiful and agreeable, through whom alone man becomes wise and glorious. According to Hesiod, and most poets and mythologists, Jupiter was their father. Hesiod calls their mother Eurynome; and most of the ancients agree with him in this point. The Lacedæmonians and Athenians, at first, knew of but two Graces, whom the former called *Phaĕnna* (the brilliant) and *Kleta* (the glorious); the latter, *Hegemone* (the leader) and *Auxo* (the propitious). King Eteocles introduced the worship of three Graces among the Orchomenians, and Hesiod gives them the names of *Aglaia* (brilliancy), *Thalia* (the blooming) and *Euphrosyne* (mirth). Homer mentions them, in the Iliad, as handmaids of Juno, but in the Odyssey, as those of Venus, who is attended by them in the bath, &c. He conceived them as forming a numerous troop of goddesses, whose office it was to render happy the days of the immortals. According to Hesiod, they were an emblem of the disposition to please, and to render social intercourse agreeable, by gayety and politeness. Later poets considered them as allegorical images. But the Graces always appear as attendant, never as ruling deities. They do not conquer hearts, but Venus conquers them through the Graces; they do not adorn themselves, but they adorn Venus. They not only improve corporeal charms, they have an influence, also, upon music, eloquence, poetry, and other arts; and the execution of acts of benevolence and gratitude is likewise superintended by them. In the earliest times, the Graces were represented entirely covered; the gold statues of Pupalus in Smyrna, and the marble ones of Socrates, at the entrance of the Acropolis, at Athens, represented them clothed. The same was the case with the statues in the temple of Elis. One of them held a rose, another a branch of myrtle (symbols of beauty and love), the third a die (the symbol of sportive youth). In later times, they were represented naked. They had many temples in Greece, partly dedicated to them alone, partly in common with other deities, particularly Venus, the Muses, Cupid, Mercury and Apollo. Their festivals were called, in Greece, *Charisia.* It was customary to swear by the Graces, and libations of wine were offered them at meals. The most celebrated Graces of modern sculpture are those of Canova and Thorwaldsen, productions which would alone render those two great artists immortal.

GRACIOSO; the theatrical name for a Spanish buffoon or droll, a masked personage; a standing character in Spanish pieces, like the *Hanswurst* of the German comedy, or the English *Merry Andrew*. This character occurs under different names, in all three species of the Spanish comedy, but especially in the pieces of intrigue (*comedias de capa y espada*). The gracioso so far resembles the harlequin of the elder comedy, from whom some derive him, that he is sometimes plump and gormandizing; but other traits—his loquacity and cowardice—are peculiar to him. His pattern is rather to be found in the Sosias of Plautus, or in the Davus, or other characters of slaves, in Terence. The Spanish poets throw in secondary traits of character in great variety, making the gracioso sometimes very cunning and dexterous, and at others, again, ridiculously silly. In some pieces, a second gracioso (*gracioso secundo*) makes his appearance, and even more have been introduced. These masked personages are rarely used as agents to involve the plot by their intrigues, but are principally employed as merry servants to parody the motives that actuate their masters, which they often do in a most agreeable and witty way. In the plays of Augustin Moreto y Cabana especially, this part is remarkable for happy strokes of wit.—In music, *gracioso* is the direction to give a passage a soft, agreeable expression.

GRÆCIA MAGNA. (See *Magna Græcia*.)

GRÆFE, Charles Ferdinand, doctor, was born at Warsaw, in 1787. He pursued his medical studies at Dresden and Halle. In 1807, he took his doctor's degree at Leipsic. His dissertation on that occasion treated on the *angeiectasy* (dilatation of the vessels) of the lips—a subject till then entirely overlooked. He was appointed body-physician at the court of the duke of Anhalt-Bernburg, and afterwards, in 1810, professor of surgery in the university of Berlin. In the war of 1813—14, he was surgeon-general of a division, and had the chief superintendence of the whole hospital establishment between the Vistula and the Weser. In 1815, he had charge of the direction and organization of all the hospitals between the Weser and the Rhine, in the grand-duchies of the Lower Rhine and Holland; in which station he restored to the royal standards 85,630 invalids. After the peace, we find him again actively occupied as a professor at Berlin. The surgical science of Germany is much indebted to his labors. He has revived and improved the almost forgotten method of restoring a lost nose. (See *Rhinoplastic*.) His merits have been particularly great in the enlargement and improvement of the clinical system. Besides his yearly official reports, from 1816 to 1822, of the clinical institute for surgery, and the treatment of diseases of the eye, he has written an Essay on the rational Cure and Knowledge of the Dilatations of the Vessels (Leipsic, 1808, 4to.); Directions for the Amputation of the large Limbs (Berlin, 1812); Rhinoplastic (Berlin, 1818; translated into Latin, and into Italian); Journal of Surgery, and the Treatment of Diseases of the Eyes (edited in conjunction with professor Walther of Bonn, since 1820); the Egyptian epidemic and contagious Blennorrhœa (or mucous discharge) of the Eyes (with copperplates, in large folio, Berlin, 1823).

GRÆVIUS, or GRÆFE, John George; a learned classical scholar, born at Naumburg, in Saxony, in 1632. Such was his ardor for study, that, while at school, he sometimes passed the greater part of the night in reading the works of Homer and Hesiod. He then went to the university of Leipsic, and afterwards to Amsterdam. At the age of 24, he was appointed professor at Duisbourg, and subsequently succeeded John Frederic Gronovius, at Deventer. Thence he was invited, by the states of Utrecht, to become professor of politics, history and rhetoric in their university, which station he filled with great reputation during 41 years; he also held the office of historiographer to the king of Great Britain, William III. He died in 1703. His literary productions consist of valuable editions of the Epistles and Orations of Cicero, and of the works of Florus, Cæsar, Suetonius, Hesiod, &c.; besides two large and valuable collections—*Thesaurus Antiquitatum Romanarum* (12 vols., folio), and *Thesaurus Antiquitatum et Historiarum Italiæ* (6 vols., folio), afterwards continued by Peter Burmann. Grævius displayed little of the pedantry and arrogance which too often deform the character of the critic, and was deservedly esteemed both as a man and a scholar.

GRAFTING; the act of inserting a shoot or scion taken from one tree, into the stem or some other part of another, in such a manner that they unite, and produce fruit of the kind belonging to the tree from which the scion was taken. By this practice, particular sorts of fruit may be kept from degenerating, which they are very apt to do when raised from the seed; for the grafts, though they receive their

nourishment from the stocks, always produce fruit of the same sort as the tree from which they were taken. This process, probably from the abundant supply of nourishment afforded to the graft, has the advantage of hastening the period of its bearing. On this account, many sorts of fruit-trees are principally raised in this way, as well as some ornamental plants of the tree and flower kind. It also affords the means of raising different varieties of the same kind of fruits and flowers on one stock.

Graham, George, a celebrated clock and watch maker, and one of the most accurate artists of his day, was born at Kirklinton, in Cumberland, in 1675. He was received into the family of the celebrated Tompion, and became the inventor of several astronomical instruments, which much advanced the progress of science. He was a member of the royal society, and constructed the great mural arch in the observatory at Greenwich. He also composed the whole planetary system within the compass of a small cabinet, from which model all succeeding orreries have been formed. Several of his papers are in the Philosophical Transactions. He died in 1751.

Grahame, James, a Scottish poet, was bred to the bar, but forsook the law to take orders in the church of England. He then entered upon a curacy in the neighborhood of Durham, when he died in the prime of life, in 1811. His poetry is mostly of a meditative and religious character, but animated, flowery and descriptive. His principal pieces are the Sabbath, the Birds of Scotland, and British Georgics.

Grain; the name of a small weight, the 20th part of a scruple in apothecaries' weight, and the 24th of a pennyweight troy.

Grain includes all those kinds of grass which bear a straw, and which are cultivated on account of their seeds for the production of meal or flour. The word *corn*, or its equivalent in other languages, is frequently applied exclusively to that kind of grain which constitutes the chief nourishment of the country; thus, in a great part of Germany, it is rye; in France, it is wheat; in the Low Countries, it is spelt (a sort of wheat); and in North America, it is maize. That the different kinds of grain grow wild in some countries, is well known, as, for example, barley and oats in Germany; but they have not the perfection of our cultivated grains. These all seem to be natives of warmer climates in Asia, Africa, America (South), and to be annual plants, becoming hybernating only from cultivation, since a summer does not suffice, in northern climates, for their developement. In common with most grasses, they form their stalks or stems upon the lower joints of the root. Their fascicular roots spread themselves out chiefly upon the surface of the ground, which they almost cover with their thick web, while a smaller part penetrates deeper, when they find looseness of soil and nourishment to attract them. All kinds of grain contain nutritious particles of a similar character, although they vary, both in their quantity and in their mixture, in various grains. These elements are,—1. gluten (q. v.), which affords the strongest nourishment for the animal body; 2. fecula or starch (q. v.), which is very nutritious, although not so much so as gluten, which, however, it seems to render more digestible; 3. a sweet mucilage, which is more nutritious than starch, but is small in quantity, and renders the grain liable to the vinous and acetous fermentation; 4. the hulls, which consist of a fibrous matter, and contain a digestible, aromatic substance; 5. moisture, which is predominant even in the dryest grain, and increases the weight of the mass, although it lessens the specific gravity; it affords no nourishment, hastens the decomposition of all kinds of grain, if they are not kept very dry, and serves, after planting, to stimulate the first motions of the germ.

Grainger, James, an English physician and poet in the last century, was born at Dunse, in Berwickshire, in 1724. His father placed him as a pupil with a surgeon at Edinburgh, where he attended the medical lectures at the university. Having finished his studies, he entered into the army as a regimental surgeon, and served in Germany till 1748; after which he took the degree of M. D., and settled in the metropolis. An Ode to Solitude procured him reputation in the literary world. In 1759, he published a translation of the Elegies of Tibullus. He then went to the West Indies, with a young gentleman to whom he had become tutor, and, on his arrival at Basseterre, in the island of St. Christopher, married the daughter of the governor. He engaged in medical practice at that place, and was very successful. His leisure was devoted to poetry; and he produced a didactic poem, in blank verse, entitled the Sugar Cane, and Bryan and Pereene, a ballad. The former he published in 1764, during a visit to England. He then returned to Basseterre, where he died of an epidemic fever, in 1767.

GRAMMAR. (See *Language.*)

GRAMME; the unit of weight in France, which has taken the place of the *gros;* equal to 15.4441 grains Troy, or 5.6481 drams avoirdupois. All greater or less weights are formed from it by multiplication or division: for instance, the *decagramme*, a weight of 10 *grammes*, which is equal to 6 drams, 10.44 grains; the *hectogramme*, a weight of 100 *grammes* (3 oz. 4 dr. 8 gr.); the *kilogramme*, a weight of 1000 *grammes* (about two pounds eight ounces); the *myriagramme*, a weight of 10,000 *grammes* (about twenty-six pounds nine ounces). The *decigramme* is a tenth of a *gramme*, or one grain and fifty-four hundredths; the *centigramme* is one hundredth of a *gramme*, or .154 of a grain; the *milligramme* is a thousandth part of a *gramme*, or .0154 of a grain: it supplies the place of the *carat.*

GRAMMONT, Philibert, count of; son of Antony, duke of Grammont. He served under the prince of Condé and Turenne, but, having rashly paid his addresses to a lady who was a well-known favorite of Louis XIV, he was obliged to quit France, and went to England two years after the restoration. He was highly distinguished by Charles II, possessing, with a great turn for gallantry, much wit, humor, politeness and good nature. He seems to have been indebted for his support chiefly to his profits at play, at which he was very successful. He married miss Elizabeth Hamilton, daughter of sir George Hamilton, and died in 1707. His celebrated Memoirs were written by his brother-in-law, Anthony, generally called count Hamilton, who followed the fortunes of James II, and afterwards entered the French service, and died in 1720.

GRAMPIAN MOUNTAINS; a chain of mountains in Scotland, which, stretching like a mighty wall along the southern front of the Highlands, extends across the island, from the district of Cowal, in the shire of Argyle, on the Atlantic, to Aberdeenshire, on the German ocean; and then, forming another ridge in a north-westerly direction, extends to the county of Moray, and the borders of Inverness. Their general height is from 1400 to 3500 feet above the level of the sea; and several peaks rise considerably higher. The height of Ben Lomond, in Dumbartonshire, is 3262; of Ben Ledy, 3009; Ben More, 3903; Ben Lawers, the chief summit, 4015; Shechallion, 3564; and Ben Voirloch, 3300.

GRANADA; an extensive maritime province, in the south of Spain, nearly 200 miles in length, and varying from 40 to 70 in breadth. Its length is nearly from E. to W., having on the S. the Mediterranean, on the N. a part of Andalusia; its south-west extremity approaches Gibraltar. Among the mountains, a calcareous soil, in many places unproductive, is prevalent; but the valleys contain a rich and fertile mould. The Viga (orchard) de Granada, where the capital is situated, is one of the richest and most delightful spots in the world. This fertility is owing chiefly to the copious streams that flow from the mountains in summer, on the melting of the snow. Vines are cultivated on the sides of the hills, but the wine is indifferent. Silk is more attended to. Along the coast are raised indigo, coffee and sugar.

GRANADA; a celebrated city in the south of Spain, and capital of the province of that name. The situation is highly romantic. The town exhibits to the approaching traveller the form of a half-moon, its streets rising above each other, with a number of turrets and gilded cupolas, the whole crowned by the Alhambra, or palace of the ancient Moorish kings, and, in the back ground, the Sierra de Nevada, covered with snow. But, on entering the gates, all this grandeur disappears; the streets are found to be narrow and irregular; the buildings display visible marks of decay, and are inferior to those of many other towns in Spain. Granada is built on two adjacent hills, and divided into four quarters. The river Darro flows between the two hills, and traverses the town, after which it falls into the larger stream of the Xenil, which flows outside the walls. In point of extent, Granada is nearly as great as in the days of its prosperity. The cathedral is an irregular but splendid building; the archbishop's palace is also extensive and elegant; likewise the mansion occupied by the captain-general of the province. But the grand ornament of Granada is the Alhambra. Though now, like the town, in a state of decay, its remains sufficiently show its original splendor. It commands a beautiful prospect; but a still finer is afforded by another Moorish palace, called the *Generaliffe*, built on an opposite hill, and the retreat of the court during the heat of summer. Granada has various manufactures, such as silk and woollen stuffs; it has also a tannery, and a manufactory of gunpowder and saltpetre. Granada is the seat of a university. Population, 66,600; 123 miles E. Seville; 224 S. Malaga; lon. 3° 46′ E.; lat. 37° 16′ N.

GRANADE. (See *Grenade.*)

GRAND BANK OF NEWFOUNDLAND; lon. 49° 45′ to 54° 45′ W.; lat. 41° 50′ to 50° 24′ N. This noted fishing-bank extends from N. to S., and is almost of a triangular shape. Between it and the island on the west, there is a broad channel of deep water. About 3000 small vessels, belonging chiefly to the U. States and Great Britain, are annually employed in the cod-fishery on this bank.

GRANDEE. In the kingdom of Castile, and in that of Arragon, there was a distinction of rank among the nobles of the country, who belonged partly to the higher, and partly to the lower, nobility. The *ricos hombres* (literally, *rich men*) made up the former; the knights (*cavalleros*) and gentlemen (*hidalgos*) the latter. The circumstances of the establishment of the new Christian states, which were founded and enlarged amid perpetual struggles against the Moors, procured an important share in the public affairs, for the descendants of the men who constituted the first armed associations for the deliverance of their country. These were the higher nobility. They limited the power of the king; they surrounded him, as his counsellors, by birthright, and had a priority of claim to the highest offices of state. As early as the 13th century, these rights were legally recognised as belonging to certain noble families, which had gained the respect of the people by their opulence and long possession of the favor of their princes; and even the name *grandee* occurs, about that age, in the code of laws (*las siete partidas*), which Alfonso X established in the kingdom of Castile. This distinction belonged only to the principal members of the higher nobility, as many were reckoned in this class who were not called grandees. But none were called grandees, who were not *ricos hombres*, i. e., descended from a family of the ancient nobility. The grandees consisted partly of the relatives of the royal house, and partly of such members of the high feudal nobility, distinguished for their wealth, as had, by the grant of a banner, received from the king the right to enlist soldiers under their own colors, and had thus acquired precedence of the other *ricos hombres*, which distinction regularly descended to their posterity. As *ricos hombres*, they partook of all the privileges of the high nobility: as such, they possessed certain feudal tenures (called *royal fiefs* or *lordships*), in consideration of which they were bound to serve the king with a proportionate number of lances (each of which consisted of a horseman with four or five armed attendants); these fiefs they could be deprived of only in certain cases determined by law. They were free from taxes, on account of serving the king with their property and persons in war. They could not be subjected to the jurisdiction of any civil or criminal judges, without the special commission of the king. They might, at any time, during the anarchy of the middle ages, leave the kingdom, together with their vassals, without hinderance, and withdraw themselves from the laws and feudal service of their country, and join another prince, even against their former sovereign, without being considered traitors on that account. Besides these general prerogatives of the higher nobility, and the priority of claim to the highest offices of state, the grandees possessed some peculiar distinctions. Such, in particular, was the right of covering the head in the presence of the king, with his permission, on all public occasions—an ancient privilege among the Spaniards, which had its origin in the spirit of a limited feudal monarchy: this, however, was conceded also to the (so called) *titulos* (titled personages, viz., dukes and counts). The king called each of them "my cousin" (*mi primo*), while he addressed the other members of the high nobility only as "my kinsman" (*mi pariente*). In the cortes, they sat immediately after the prelates, before the *titulos*. They had free entrance into the palace and apartments of the king, and, on festival occasions, sat in the royal chapel near the altar. Their wives participated in the external marks of respect belonging to the rank of their husbands: the queen rose up from her seat to receive them, and cushions were laid for them upon an elevated settee (*estrada*). After Ferdinand and Isabella, guided and assisted by the able Ximenes, crushed the power of the feudal nobility, the privileges of the higher nobility were diminished; and, at the close of the 15th century, the name of the *ricos hombres* was lost, together with their privileges. Though Ferdinand's successor, Charles V, was little inclined to give up the struggle for unlimited power, he nevertheless found many inducements to attach some of the principal men of the kingdom to himself, and to reward others for the important services which they had rendered him in the suppression of the insurrection of the commons. The rank which ancient custom had fixed in the respect of the people, he distinguished by the name of *grandezza*, and raised to be a particular order of nobility, the prerogatives of which consisted mostly in external marks of dis-

tinction. Thus he avoided reviving the power possessed by the feudal nobility in early ages, and completed what had been begun under Ferdinand and Isabella, by making of an independent feudal nobility a dependent order of court nobles. There were three classes of grandees. Some the king commanded to be covered before they spoke to him: these were grandees of the first class. Others received the command as soon as they had spoken, and so heard his answer with their heads covered: these were grandees of the second class. Others, again, did not receive the king's command to be covered until after he had answered them: these were grandees of the third class. Latterly, it is true, these distinctions of rank became antiquated; but there were still three classes of grandees, although without any essential differences. They all enjoyed, up to the time of the last revolution, besides the above-mentioned privileges, that of being called *excellency*, and that of having a stamp given with the foot, when they entered the royal palace through the hall of the guards, by way of notice to the sentinel to present arms to them. They had no other marks of distinction from the rest of the high nobility. They did not constitute a particular society, as did formerly the dukes and peers in France; and no high offices were exclusively appropriated to them, except, perhaps, the mastership of the horse, the lord-chamberlainship, and the captaincy of the halberdier guard, might be so considered. In truth, the royal will was not subjected to any limits in the nomination even to these court-offices.

Grand Jury. (See *Jury, Grand.*)

Granite is considered as the foundation rock of the globe, or that upon which all secondary rocks repose. From its great relative depth, it is not often met with, except in Alpine situations, where it presents the appearance of having broken through the more superficial strata of the earth, the beds of other rocks in the vicinity rising towards it at increasing angles of elevation as they approach it. It is composed of three minerals, viz., quartz, feldspar and mica, which are more or less perfectly crystallized and closely united together. They vary considerably in the relative proportions in which they exist, in the granites of different localities, as also in the size of the grains; but feldspar is usually the predominating ingredient. Granite has been divided into several subspecies, or varieties; of these, the following are the most important: *Common granite*, in which the three ordinary constituents above mentioned occur in nearly equal proportions; the feldspar may be white, red or gray. *Porphyritic granite*, in which large crystals of feldspar are disseminated through a common granite, whose ingredients are fine-grained. *Graphic granite*, which consists of feldspar in broad laminæ, penetrated perpendicularly with long, imperfect crystals of quartz, whose transverse angular sections bear some resemblance to certain letters, especially to those of Oriental languages. *Sienite* or *sienitic granite*, in which hornblende, either wholly or in part, supplies the place of mica. *Talcky* or *chloritic granite* (the *protogine* of the French), in which talck or chlorite takes the place of the mica. *Feldspathic granite* (the *white-stone* of Werner, and the *eurite* of the French), in which feldspar is the principal ingredient. Granite occurs in masses of vast thickness, which are commonly divided, by fissures, into blocks that approach to rhomboidal or tolerably regular polyhedral forms. In some instances, however, it affects a laminated structure, owing to the preponderance of mica, and its arrangement in layers. When this is the case, it passes into the rock called *gneiss.* (q. v.) The aspect of granitic mountains is extremely diverse, depending, in part, upon the nature of its stratification, and the degree of disintegration it has undergone. Where the beds are nearly horizontal, or where the granite, from the preponderance of feldspar, is soft and disintegrating, the summits are rounded and heavy. Where hard and soft granite are intermixed, in the same mountain, the softer granite is disintegrated, and falls away, leaving the harder blocks and masses piled in confusion upon each other, like an immense mass of ruins. Where it is hard, and the beds are nearly vertical, it forms lofty pyramidal peaks or *aiguilles*, like the Aiguille de Duc and others, in the neighborhood of Mont Blanc. Granite forms some of the most lofty of the mountain chains of the eastern continent. In Europe, the central part of the principal mountain ranges is of this rock, as in Scandinavia, the Alps, the Pyrenees, and the Carpathian mountains. In Asia, granite forms a considerable part of the Uralian and Altaic ranges of mountains; and it appears, also, to compose the principal mountains that have been examined in Africa; whereas, in the western hemisphere, it has never been observed rising to such great elevations, or composing such extensive chains. It is, never-

theless, very abundantly distributed over the northern parts of the American continent, as in Labrador, the Canadas, and the New England states. In New Hampshire, it is the predominating rock of the White mountains, in which it attains the elevation of more than 6000 feet. In the Andes, it has been observed at the height of 11,000, but is here generally covered by an immense mass of matter, ejected by ancient and recent eruptions. Granite very frequently forms veins, shooting up into the superincumbent rocks, which seems to indicate that it has existed below in a state of fusion, the heat of which has softened and parted the upper rocks, and forced up the granite, in a melted state, into these fissures. Instances of this kind are very frequent in New England, where the strata of mica-slate, and of gneiss, are parted by perpendicular dikes or veins of granite, which sometimes are seen shooting up far above the intersected rocks, the strata of which, in the immediate vicinity of the veins, are bent upwards, proving, in the most satisfactory manner, that these masses of granite have been protruded from below, and not infiltrated from above, as was once imagined. Granite abounds in crystallized earthy minerals; and these occur, for the most part, in those masses of it existing in veins. Of these minerals, beryl, garnet and tourmaline are the most abundant. It is not rich in metallic ores, though it contains the principal mines of tin, as well as small quantities of copper, iron, tungsten, bismuth, silver, columbium and molybdenum. Granite supplies durable materials for architecture, and for decoration. It varies much in hardness, as well as in color; accordingly, there is room for much care and taste in its selection. The *Oriental basalt*, found in rolled masses, in the deserts of Egypt, and of which the Egyptians made their statues, is a true granite, its black color being caused by the presence of hornblende and the black shade of the mica. The original statue of the Nile, which was placed in the temple of peace, at Rome, was made from this granite. The *Oriental red granite*, which is chiefly found in Egypt, is composed of large grains, or imperfectly formed crystals, of flesh-colored feldspar, of transparent quartz and of black hornblende. Like the Oriental basalt, it is susceptible of a fine polish. Of the remarkable monuments of antiquity constructed of this beautiful granite, Pompey's pillar and the two famous obelisks at Alexandria, called *Cleopatra's Needles*, are the most celebrated. The former of these is 88 feet in height, and 9 feet in diameter at its base; it is formed of but three pieces. In modern times, however, granite is less employed in architecture than formerly; the softer and more easily quarried rocks are preferred. It is more extensively used in Boston than in any other city of the U. States. The Bunker Hill monument, now erecting in its vicinity, is to be constructed of this fine material.

Grant, in law; a gift in writing of such a thing as cannot be passed or conveyed by word only, as a grant is the regular method, by the common law, of transferring the property of incorporeal hereditaments, or such things whereof no actual delivery of possession can be had. The operative words in grants are *dedi et concessi* (I have given and granted). Grants may be void by uncertainty, impossibility, being against law, or a mode to defraud creditors, &c.

Granulation; the method of dividing metallic substances into grains or small particles, in order to facilitate their combination with other substances, and sometimes for the purpose of readily subdividing them by weight. This is done either by pouring the melted metal into water, or by agitating it in a box until the moment of congelation, at which instant it becomes converted into a powder.

Granulation (*granulatio*, from *granum*, a grain), in surgery. The little, grain-like, fleshy bodies, which form on the surfaces of ulcers and suppurating wounds, and serve both for filling up the cavities, and bringing nearer together and uniting their sides, are called *granulations*. Nature is active in bringing parts, whose disposition, action and structure have been altered by accident or disease, as nearly as possible to their original state; and, after having, in her operations for this purpose, formed pus, she immediately sets about forming a new matter upon surfaces, in which there has been a breach of continuity. This process has received the name of *granulating* or *incarnation*. The color of healthy granulations is a deep florid red. When livid, they are unhealthy, and have only a languid circulation. Healthy granulations, on an exposed or flat surface, rise nearly even with the surface of the surrounding skin, and often a little higher; but when they exceed this, and assume a growing disposition, they are unhealthy, soft, spongy, and without any disposition to form skin. Healthy granulations are always prone to unite.

GRANVELLA, Antoine Perrenot, cardinal de, a minister of state to Charles V and Philip II, was born, in 1517, at Ornans, in the county of Burgundy. He studied first at Padua, and afterwards applied himself to theology at Louvain. He was subsequently initiated in state affairs by his father. Acquainted with seven languages, so as to speak them with facility, endowed with uncommon penetration and perseverance, and having a prepossessing person and pleasing manners, he gave the reins to his ambition, to which no office in the state appeared too high. In his 23d year, he was appointed bishop of Arras, and accompanied his father to the diet at Worms and Ratisbon, where the labors of both were fruitlessly employed in negotiations for the suppression of the religious commotions of the time. He also assisted at the opening of the council of Trent, and endeavored to engage the forces of Christendom in the war against France. When the Protestants, after the defeat at Muhlberg, sued for peace, Granvella was commissioned to draw up the conditions, and, in doing so, deceived, it is said, the landgrave of Hesse, who remained a prisoner, though he had been assured of his liberty. About the same time, he effected the capture of Constance from the Protestants by surprise. In 1550, he was made counsellor of state, and had charge of the great seal. In 1552, when the emperor, having been surprised by Maurice of Saxony in the Tyrol, fled from Innspruck, by night, in a litter, Granvella accompanied him with lance in rest. The treaty of Passau, concluded soon after that event, which delivered Germany, certainly does great honor to Granvella. In 1553, he negotiated the marriage of don Philip with Mary, queen of England. In 1556, he made answer, in the name of Philip, to the speech of Charles V before the states of Flanders, at his abdication, and spoke in a manner worthy the occasion. The armistice of Vaucelles had established peace between France and Spain for five years. Henry II, king of France, infringed it. Granvella renewed the negotiations, and finally procured a treaty of peace, which he signed at Chateau-Cambresis, in 1559. Philip immediately after quitted the Netherlands, which were already in a state of great commotion, leaving Margaret of Parma as governor, and Granvella as her minister. This post necessarily brought upon him the hatred of the people, as all harsh and forcible measures were charged to him, while, at the same time, his enemies represented to Philip, that his weakness and mildness favored the advancement of the new opinions. Philip, however, knew better the abilities of his minister, and appointed him to the archbishopric of Mechlin. His zeal for the reassembling of the council of Trent, and for the suppression of Baianism, procured him a cardinal's hat. Granvella's enemies did not, on that account, desist from uttering their complaints against him, and even succeeded in prejudicing the weak Margaret against him, and at length, in 1564, obtained the commands of Philip for his return to Franche Comté. Margaret soon discovered her error in depriving herself of such a faithful minister, and sought, but in vain, to procure his return. Granvella spent the next five years in study and the society of learned men. He was a member of the conclave which elected Pius V to the popedom. In 1570, Philip sent him once more to Rome, to conclude an alliance with the pope and the Venetians against the Turks. These last threatened Naples, whither Granvella was sent as viceroy. In circumstances involving so much difficulty, he not only took proper measures for defence, but also made many excellent regulations for the internal welfare of the state; and Naples had reason to anticipate great advantages from his ability and uprightness, when, in 1575, he was recalled to the council of state. Philip, eager to have the credit of governing by himself, merely gave Granvella the title of *president of the supreme council of Italy and Castile*, so that the cardinal was not in name, although in reality, prime minister. In this capacity, he negotiated the union of Portugal with Spain; witnessed the insurrection in the Netherlands, which he had foreseen; and concluded a marriage between the infanta Catharine and the duke of Savoy, which was a master-stroke of policy, as it counteracted the plans of France with regard to Milan. In the midst of this incessant occupation, he died, in 1586, of a consumption. Whatever opinion may be formed of Granvella, all will agree, that he was indefatigable, firm in his resolutions, sharp-sighted, high-principled, irreproachable in his administration, moderate even towards the weakest of his enemies, and steadily active in the cause of Spain and his religion.

GRAPE. (See *Vine*.)

GRAPE-SHOT is a combination of small shot, put into a thick canvass bag, and corded strongly together, so as to form a

kind of cylinder, the diameter of which is equal to that of the ball adapted to the cannon. The number of shot in grape varies according to the service or size of the guns.

GRAPHITE. (See *Plumbago.*)

GRAPLING, FIRE; an instrument nearly resembling the grapnel (q. v.), but differing in the construction of its flukes, which are furnished with strong barbs on its points. These are usually fixed by a chain on the yard-arms of a ship, to grapple any adversary whom she intends to board, and are particularly requisite in fire-ships.

GRAPNEL, or GRAPLING; a sort of small anchor, fitted with four or five flukes or claws, and commonly used to fasten boats or other small vessels.

GRASSES; a very large and very natural family of plants, distributed over the whole earth, and comprising many of the most useful of all vegetables, as wheat, rye, barley, oats, rice, Indian corn, and the sugar-cane, besides a vast many species suitable and employed for fodder. The whole family of ruminant animals is mainly dependent for subsistence on different species of grasses. The roots of these plants are fibrous; the stems or culms cylindrical, provided, at intervals, with knots, from each of which arises a long linear or lanceolate leaf, sheathing the stem for some distance; the flowers are produced from the superior sheaths, supported on a common peduncle, or axis, and are disposed in heads, spikes, simple or branching, or in panicles; the calyx is composed of one or two scales or glumes, inserted the one above the other, and contains one or several flowers, each of which is surrounded with one or two scales, disposed in a similar manner; the stamens are usually three, sometimes one, two, or six; the ovary is simple, and becomes a seed, either naked or enveloped by an interior glume. These plants are herbaceous with a few exceptions, as the bamboo, which has the hardness of wood. More than 300 species inhabit the U. States, notwithstanding which, the grasses commonly cultivated for fodder in this country are of European origin.

GRASSHOPPER. (See *Locust.*)

GRATE; a frame of iron bars, used for burning coal as fuel. Grates are commonly smaller than fire-places intended for the consumption of wood, on account of the greater heat emitted by coal. Those used for burning anthracite should be made deeper and of a greater height than others, so as to present a comparatively small surface to the air; for, in very cold weather, the air conducts the heat from the surface faster than combustion renews it, so that, if the amount of surface exposed be large, the fire will go out. This kind of coal yields no visible smoke. The chimney, however, should be large enough to transmit smoke, otherwise some of the carbonic acid, which is formed during the combustion, will be sent into the room. This gas is the suffocating vapor of burning charcoal.

GRATIAN, a Benedictine of the 12th century, was a native of Chiusi, and was the author of a famous work, entitled *Decretal*, or *Concordia discordantium Canonum*, in which he endeavors to reconcile those canons that seem to contradict each other. The errors of this work, which are not a few, have been exposed by subsequent writers. It is, however, a rich storehouse of the canon law of the middle ages. The best editions are those of Rome (1582), four volumes, folio, and of Lyons (1671), three volumes, folio.

GRATINGS; a sort of open cover for the hatches, resembling lattice-work, serving to give light to the lower apartments, and to permit a circulation of air, both of which are particularly necessary, when, from the turbulence of the sea, the ports between decks are obliged to be shut.

GRATTAN, Henry, an eminent Irish orator and statesman, was born at Dublin, about the year 1750. He finished his education at Trinity college, whence he removed to England, and became a student in the Middle Temple. He was called to the Irish bar in 1772, and, in 1775, was brought into the parliament of Ireland. He immediately became distinguished in the opposition, and infused that spirit into the country, which in two years aroused 80,000 volunteers, and produced, in 1782, a repeal of the statute of 6th George I, which had enacted, that the crown of Ireland was inseparably connected with that of Great Britain; that Ireland was bound by British acts of parliament when named therein; that the Irish house of lords had no jurisdiction in matters of repeal; and that the dernier resort, in all cases of law and equity, was in the lords of Great Britain. For his share in the acquirement of this concession, the Irish parliament voted him £50,000, and a house and lands for him and his heirs for ever. Two or three sessions of great parliamentary exertion followed, which were distinguished by the rivalry of Messrs. Grattan and Flood, which terminated in the confirmed ascendency of the former, who became the leader of the country party, in the house

of commons, and the head of the Irish whigs. In 1790, although already avowedly zealous for concessions to the Catholics, Mr. Grattan was returned for the city of Dublin, and remained an active senator until the premature recall of earl Fitzwilliam. Disgusted by the policy which followed, and by the Irish rebellion, and its manifold horrors, he temporarily seceded from parliament, and lived in retirement. The project of a union being brought forward by Mr. Pitt, he once more obtained a seat in parliament, for the purpose of opposing it. When carried, however, he did not refuse a seat in the united house of commons, being returned, in 1805, for the borough of Malton, in Yorkshire. He supported the war policy of the administration, but the later years of his parliamentary attendance were chiefly occupied in a warm and energetic support of Catholic emancipation. He died in the service of this cause; for, being unanimously called upon, by the Catholic body, to carry their petition to England, and to present and support it in the house of commons, when the exertions were represented, by his friends, as incompatible with his age and declining health, he nobly replied, that "he should be happy to die in the discharge of his duty." He did in fact die soon after his arrival in London, May 14, 1820, at the age of 70. His remains were interred in Westminster abbey. In the political life of Mr. Grattan there was nothing temporizing or dubious. He was the zealous and unequivocal friend to Ireland, and to what he deemed her best interests, from first to last. In private life, he was a warm friend, and, until years had softened his ardent temperament, a bitter enemy. As a public speaker, he had to contend with a defective voice; but his eloquence was always bold and commanding, combining strength with beauty, and energy and elevation with elegance. He was at all times animated, and occasionally powerful.

Gratz; a town of Stiria, on the river Muhr, capital of a circle of the same name, comprising the northern part of Lower Stiria. It is built on a very steep hill, on the banks of the Muhr, and has a lyceum, an academy, and a large school. The houses are of stone, and the town is in general well built. It has 22 churches and chapels, great and small. The cathedral is not new, but was formerly the parish church. The most striking edifice in the place is a mausoleum erected to the emperor Ferdinand II. Gratz has many manufactures, such as hardware, stoneware and saltpetre; also cotton and silk. 100 miles S. W. Vienna. Of the 34,000 inhabitants, 12,000 are engaged in the manufacture of chintz and calico. Lon. 15° 26′ 15″ E.; lat. 47° 4′ 9″ N.

Graun, Charles Henry, a musical composer, master of the chapel to Frederic II of Prussia, was born in 1701, at Wahrenbruck, in Saxony, where his father was a receiver of excise. In 1713, he went to a school in Dresden. His fine voice procured him the situation of singer in the church. In 1720, he left the school, and began to compose for the church. He spent some years in Brunswick, as a singer and composer, until the crown-prince of Prussia obtained him from the duke Ferdinand Albert, and placed him in his chapel, at Rhineberg, in 1735. Here he prepared *cantatas* for the concerts of the prince, which he also performed himself. When the prince succeeded to the throne, in 1740, he appointed Graun to be master of his chapel, and sent him to Italy, to engage the male and female singers necessary for the newly established opera. During this journey, Graun occasionally sung his own compositions in public, with applause. After his return, he devoted himself entirely to composition for the opera, until his death, at Dresden, in 1759. The king shed tears when he heard the news of this event. Graun is reckoned among the most correct and elegant composers. The first of his known compositions are the *mottettes*, which he composed while at school, in Dresden. The pieces which he composed while in Brunswick, Rhineberg and Berlin, are very numerous. There are among them about 30 operas. His music for Ramler's oratorio for passion week, *Der Tod Jesu* (The Death of Jesus), is generally considered as his masterpiece, particularly on account of the recitatives and choruses which it contains. The chapel-master Hiller has written a Life of Graun.

Grave, in music, is applied to a sound which is of a low or deep tone. The thicker the cord or string, the more grave is the note or tone; and the smaller, the more acute. *Grave*, in the Italian music, denotes a very grave and slow motion, somewhat faster than *adagio*, and slower than *largo*.

Grave Accent, in grammar, shows that the voice is to be lowered. Its mark stands thus ˋ. (See *Accent*.)

Gravel. (See *Stone*.)

Graver. (See *Engraving*.)

S'Gravesande, William James van; an eminent Dutch mathematician and natu-

ral philosopher of the 18th century. He was born in 1688, at Bois-le-Duc, and studied the civil law at the university of Leyden, where he took his doctor's degree in 1707. He settled at the Hague, and practised as a barrister; but his attention was much engrossed by mathematics and physics, on which subjects he published some dissertations in the Literary Journal of the Hague, in the conduct of which he was concerned. In 1715, he was appointed secretary to the embassy sent by the states-general to England, to congratulate George I, on his accession to the crown. On this occasion, doctor 'sGravesande formed an acquaintance with sir Isaac Newton, and was chosen a fellow of the royal society. On his returning home, he became professor of mathematics and astronomy at Leyden, where he first taught the Newtonian philosophy. In 1721, he went to Cassel, at the request of the landgrave of Hesse, to examine the famous wheel of Orffyreus, a professed exhibition of the perpetual motion. He himself considered it not necessarily impossible to prepare a machine which should contain in itself a principle of perpetual motion. In 1734, he received the chair of philosophy, which he filled with much distinction. The death of two promising sons threw him into a lingering illness, of which he died in 1742, aged 55. He possessed great power of concentrating his attention. He could, for instance, carry on intricate mathematical calculations in the midst of a number of people engaged in conversation. To his labors in the cause of science as a lecturer, he added the publication of several works, which contributed to make known the discoveries of Newton, and extend the boundaries of knowledge. Among these were, *Physices Elementa Mathematica, Experimentis confirmata, sive Introductio ad Philosophiam Newtonianam* (1720), translated into English by doctor Desaguliers; *Matheseos Universalis Elementa* (1727, 8vo.), and *Introductio ad Philosophiam, Metaphysicam et Logicam continens.*

Gravesend; a market-town of Kent, not far from the mouth of the Thames, 22 miles east of London. It is a great rendezvous for shipping. The numerous vessels which usually lie at anchor in the river, keep up a constant influx of seamen and strangers. The bathing establishment draws additional visiters in the summer season; and, from all these circumstances, this town presents a continued scene of bustle and activity. There is a canal to Rochester. The inhabitants are much engaged in seafaring employments. A small manufactory for cables and ropes is also carried on here; and there is, besides, a yard for ship-building, in which several men-of-war have been built. Population, 6580.

Gravina, John Vincent, an eminent jurist and man of letters, was born, at Rogiano, a castle in Calabria, in 1664. He studied civil and canon law at Naples, and, visiting Rome, resided, for some years, with Paul Coardo, of Turin. He was one of the founders of the academy of the Arcadians, and drew up their laws in the style of the Roman tables. In 1698, he was appointed professor of civil law, at the college della Sapienza, and, five years afterwards, he succeeded to the chair of canon law and the exposition of the decretal. He gained great reputation by his writings, which were numerous. The principal, *Origines Juris Civilis*, is considered a classical work, replete with learning. To the Naples edition, printed in 1713, was subjoined a treatise *De Imperio Romano*, also highly esteemed. He was also the author of Institutes of Civil and Canon Law; some treatises; *Della Tragedia; Della Ragion Poetica; De Institutione Poetarum*, and five tragedies, written on the model of the ancients, which were not favorably received. He was invited to Turin by the duke of Savoy, and was preparing to go thither when he was seized with an illness, and died in 1718, in the arms of his scholar, Metastasio, whom he made his chief heir.

Graving; the act of cleaning a ship's bottom, when she is laid aground, during the recess of the tide.

Gravitation (from *gravitas*, Latin); the act of tending to a centre. Or *gravitation* may be more generally defined the exercise of gravity, or the action which a body exercises on another body by the power of gravity. (See *Attraction.*)

Gravity (*gravitas*, Latin), in physics; the natural tendency or inclination of bodies towards a centre. *Terrestrial gravity* is that force by which all bodies are continually urged towards the centre of the earth. It is in consequence of this force, that bodies are accelerated in their fall, and, when at rest, that they press the body, or that part of the body, by which they are supported. As to the cause of gravity, or its nature, nothing is known; and it would be useless to detail the hypotheses advanced to account for this most important law of nature. All that can be said is, that it appears to be an essential property of matter, or, at least, of all

matter that has hitherto become the object of human investigation, though it is by no means certain that matter may not exist, which is not subject to its influence. This part of the subject appears to be beyond human comprehension. Instead, therefore, of wasting our time in useless speculation as to the cause, let us only attend to its effects, and content ourselves with examining more particularly the manner in which this principle operates on material bodies, and the laws by which it appears to be regulated; the principal of which, as deduced from experiment, or from the most unequivocal inferences, are as follows: 1. that gravitation takes place between the most minute particles of bodies; 2. that it is proportional to the masses of those bodies; 3. that it varies inversely as the square of the distance, in proceeding from the surface of the body outwards, or from its centre; 4. that it varies directly as the distance, in descending from the surface to the centre in uniform spherical bodies; 5. that it acts equally on bodies in a state of rest, as on those in motion, and that its action in the latter case is always the same, whether that motion be to or from the centre of attraction, or in any other direction; 6. that it is transmitted instantaneously from one body to another. Gravity, as relating to the science of mechanics, is divided into *absolute* and *relative*. *Absolute gravity* is that by which a body descends freely and perpendicularly in a vacuum or non-resisting medium. *Relative gravity* is that by which a body descends, when the absolute gravity is constantly counteracted by a uniform, but inferior force, such as in the descent of bodies down inclined planes, or in resisting mediums. (See *Inclined Plane.*) *Specific gravity* is the relative gravity of any body or substance, considered with regard to some other body, which is assumed as a standard of comparison; and this standard, by universal consent and practice, is rain water, on account of its being less subject to variation in different circumstances of time, place, &c., than any other body, whether solid or fluid; and, by a very fortunate coincidence, at least to English philosophers, it happens, that a cubic foot of rain water weighs 1000 ounces avoirdupois. Consequently, assuming this as the specific gravity of rain water, and comparing all other bodies with this, the same numbers that express the specific gravity of bodies, will at the same time denote the weight of a cubic foot of each in avoirdupois ounces, which is a great convenience in numerical computations. From the preceding definition, we readily draw the following laws of the specific gravity of bodies; viz. 1. in bodies of equal magnitude, the specific gravities are directly as the weights, or as their densities; 2. in bodies of the same specific gravities, the weights will be as the magnitudes; 3. in bodies of equal weights, the specific gravities are inversely as the magnitudes; 4. the weights of different bodies are to each other in the compound ratio of their magnitudes and specific gravities. Hence it is obvious, that, of the magnitude, weight and specific gravity of a body, any two being given, the third may be found; and we may thus find the magnitude of bodies, which are too irregular to admit of the application of the common rules of mensuration; or we may, by knowing the specific gravity and magnitude, find the weight of bodies which are too ponderous to be submitted to the action of the balance or steelyard; or, lastly, the magnitude and weight being given, we may ascertain their specific gravities.

Other properties relating to the specific gravity of bodies are as follows; viz. 1. A body immersed in a fluid will sink, if its specific gravity be greater than that of the fluid; if it be less, the body will rise to the top, and be only partly immerged; and if the specific gravity of the solid and fluid be equal, it will remain at rest in any part of the fluid in which it may be placed. 2. When a body is heavier than a fluid, it loses as much of its weight, when immersed, as is equal to a quantity of the fluid of the same bulk or magnitude. 3. If the specific gravity of the fluid be greater than that of the body, then the quantity of the fluid displaced by the part immerged, is equal to the weight of the whole body; and hence, as the specific gravity of the fluid is to that of the body, so is the whole magnitude of the body to the part immerged. 4. The specific gravities of equal solids, are as their parts immerged in the same fluid. 5. The specific gravities of fluids are as the weights lost by the same immerged solid. A solid substance, rarer than the fluid medium, must evidently sink, till it displace an equal weight of the fluid. The submerged part of the solid hence always marks the volume of this equiponderant mass. If the floating body have a globular shape, terminated by a long slender stem, its depression in any liquid will measure the smallest differences of specific gravity. The stem may be made exactly cylindrical, for in-

stance, and divided into portions which correspond to the 1000th parts of the bulk of the ball. Such is the general construction of the hydrometer, a very convenient instrument for examining readily the densities of different liquids. The stem will scarcely bear more than 100 distinct subdivisions; but the range can be easily enlarged, by attaching, as circumstances may require, loads answering to 100, 200, 300, &c. One of the easiest and simplest methods of determining the densities of different liquids, is by a set of small glass beads, previously adjusted, and numerically marked. Thrown into any liquor, the heavier balls sink, till they approach the required density, and become gradually buoyant, and the one which first rises to the surface indicates, in 1000th parts, the specific gravity of the fluid. These balls are adapted for examining liquids, whether lighter or heavier than water. But the most accurate and concise mode of ascertaining the density of liquids, is to employ a small glass measure with a very short, narrow neck, and adjusted to hold exactly 1000 grains of distilled water. The vessel being filled with any other liquid, the weight of it is observed, and thence its relative density to water may be found by merely striking off three decimal places. At each operation, the glass must be carefully rinsed with pure water, and again dried, by heating it, and then sucking out the humified air, for a few minutes, by the help of a slender inserted tube. If fluids of various densities, and not disposed to unite in any chemical affinity, be poured into a vessel, they will arrange themselves in horizontal strata, according to their respective densities, the heavier always occupying a lower place. This stratified arrangement of the several fluids will succeed, even though a mutual attraction should subsist, provided its operation be feeble and slow. Thus a body of quicksilver may occupy the bottom of a glass vessel, above it a layer of concentrated sulphuric acid, next this a layer of pure water, and then another layer of alcohol. The sulphuric acid would scarcely act at all upon the mercury, and a considerable time would elapse before the water sensibly penetrated the acid, or the alcohol the water. Bodies of different densities might remain suspended in those strata. Thus, while a ball of platinum would lie at the bottom of the quicksilver, an iron ball would float on its surface; but a ball of brick would be lifted up to the acid, and a ball of beech would swim in the water, and another of cork might rest on the top of the alcohol.

Table of Specific Gravities of Metals, Stones, Earths, &c.

[It may be convenient here to state merely in round numbers, the specific gravities of the more remarkable substances.]

Metals.	
Platinum, purified,	19.50
" hammered,	20.34
" laminated,	20.34
" drawn into wire,	22.07
Gold, pure and cast,	19.26
" hammered,	19.36
Mercury,	13.57
Lead, cast,	11.35
Silver, pure and cast,	10.47
" hammered,	10.51
Bismuth, cast,	9.82
Copper, cast,	8.79
" wire,	8.89
Brass, cast,	8.40
" wire,	8.54
Cobalt and nickel, cast,	7.81
Iron, cast,	7.21
Iron, malleable,	7.79
Steel, soft,	7.83
" hammered,	7.84
Tin, cast,	7.30
Zinc, cast,	7.20
Antimony, cast,	4.95
Molybdenum,	4.74
Sulphate of barytes,	4.43
Zircon of Ceylon,	4.41
Stones.	
Oriental ruby,	4.28
Brazilian ruby,	3.53
Bohemian garnet,	4.19
Oriental topaz,	4.01
Diamond,	3.50
Crude manganese,	3.53
Flint glass,	2.89
Glass of St. Gobin,	2.49
Fluor spar,	3.18
Parian marble,	2.34
Peruvian emerald,	2.78
Jasper,	2.70
Earths, &c.	
Carbonate of lime,	2.71
Rock crystal,	2.65
Flint,	2.59
Sulphate of lime,	2.32
Sulphate of soda,	2.20
Common salt,	2.13
Native sulphur,	2.03
Nitre,	2.00
Alabaster,	1.87
Phosphorus,	1.77
Plumbago,	1.86
Alum,	1.72
Asphaltum,	1.40
Jet,	1.24

Coal, from	1.24 to 1.30
Sulphuric acid,	1.84
Nitric acid,	1.22
Muriatic acid,	1.19
Liquids, Oils, &c.	
Equal parts by weight of water and alcohol,	.93
Ice,	.92
Strong alcohol,	.82
Sulphuric ether,	.74
Naphtha,	.71
Sea water,	1.03
Oil of sassafras,	1.09
Linseed oil,	.94
Olive oil,	.91
White sugar,	1.61
Resins, Gums, &c.	
Gum arabic and honey,	1.45
Pitch,	1.15
Isinglass,	1.11
Yellow amber,	1.08
Hen's egg, fresh laid,	1.09
Human blood,	1.05
Camphor,	.99
White wax,	.97
Tallow,	.94
Pearl,	2.75
Sheep's bone,	2.22
Ivory,	1.92
Ox's horn,	1.84
Wood.	
Lignum vitæ,	1.33
Ebony,	1.18
Mahogany,	1.06
Dry oak,	.93
Beech,	.85
Ash,	.84
Elm, from	.80 to .60
Fir, from	.57 to .50
Poplar,	.38
Cork,	.24
Gases.	
Chlorine,	.00302
Carbonic acid gas,	.00164
Oxygen gas,	.00134
Atmospheric air,	.00121
Azote,	.00098
Hydrogen gas,	.00008

Gravity, Centre of, in mechanics, is a point within a body, through which, if a plane pass, the segments on each side will equiponderate; that is, neither of them can move the other. Hence, if the descent of the centre of gravity be prevented, or if the body be suspended by its centre of gravity, it will continue at rest in equilibrium in any position. The whole gravity, or matter, of a body may be conceived united in its centre of gravity; and, therefore, it is usual, in demonstration, to substitute the centre for the body. In homogeneous bodies, which may be divided lengthwise into similar and equal parts, the centre of gravity will be the same as the centre of magnitude. The centre of gravity of a parallelogram or cylinder, or any prism whatever, is in the middle point of the axis, and the centre of gravity of a circle, or any regular figure, is the same as the centre of magnitude. The common centre of gravity of two bodies, is a point so situated in a right line joining the centres of the two bodies, that, if the point be suspended, the two bodies will equiponderate and rest. Thus the point of suspension in a balance or steelyard, where the two weights equiponderate, is the common centre of gravity of the two weights.

Gravity, in music, is the modification of any sound, by which it becomes deep or low in respect of some other sound.

Gray, Thomas, a distinguished English poet, was the son of a money scrivener in the city of London, where he was born in 1716. He was sent to Eton, and there laid the foundation of his future intimacy with Horace Walpole and Richard West. In 1734, he removed to Cambridge as a student of St. Peterhouse, where he early obtained some reputation for literature and poetry. He quitted college in 1738, and entered himself at the Inner Temple, with a view of studying law, but was easily induced to accept the invitation of Mr. Walpole to accompany him in his tour of Europe, towards the close of which they separated, in consequence of some disagreement. Gray finished the expedition by himself, and returned to England in 1741. His father soon after died, and leaving but a small property, Mr. Gray returned to academic retirement at Cambridge. Here he occupied himself several years in laying literary schemes and plans of magnitude, which he admirably commenced, but wanted energy to mature. So slow was he to publish, that it was not until 1747 that his Ode on a distant Prospect of Eton College made its appearance; and it was only in consequence of the printing of a surreptitious copy, that, in 1751, he published his Elegy written in a Country Church-yard. In 1757, on the death of Cibber, the office of laureate was offered to Mr. Gray, who declined it, and the same year published his two principal odes, On the Progress of Poesy, and The Bard. In 1759, he removed to London, where he resided for three years. In 1768, the duke of Grafton presented him with the professorship of modern history at Cambridge; in consequence of which he wrote the Ode for Music, for the installa-

tion of that nobleman as chancellor of the university the following year. It was the intention of Gray to do something more than his predecessors, who had made the office a sinecure, although affording a salary of 300*l.* per annum; but, his health soon after declining, he proceeded no farther than to sketch a plan for his inauguration speech. He died of the gout in his stomach, on the 30th July, 1771, in his fifty-fifth year, and was buried with his mother in the church-yard of Stoke Pogeis in Buckinghamshire. As a poet, Gray is splendid, lofty, energetic and harmonious. Although lyric poetry was what he chiefly cultivated, he would have excelled in the didactic, if a judgment may be formed from his noble fragment of An Essay on the Alliance of Education and Government. As a writer of Latin verse, he is surpassed by few, and his letters are admirable specimens of the epistolary style. In his disposition he was peculiarly fastidious, which gave an air of effeminacy and timidity to his manners, subjecting him to much ridicule, at the same time singularly contrasting with the manly strains of his poetry. His general acquirements were uncommon, but his want of energy and perseverance rendered his extensive research little effective. (See *Memoirs of his life*, &c. by Mason.)

GRAY, lady Jane. (See *Grey.*)

GREAT BAHAMA. (See *Bahamas.*)

GREAT BAHAMA BANK. (See *Bahama Bank.*)

GREAT ST. BERNARD. (See *Bernard, Great St.*)

GREAT BRITAIN, *Geography and Statistics of.* Great Britain is the largest of the European islands, and constitutes the chief part of the British European dominions. It includes the countries of England, Scotland and Wales, each of which, as well as Ireland, has a separate article. The present article treats only of what properly relates to the BRITISH EMPIRE. The island of Great Britain is situated to the west of the continent, and stretches from about 50° to 58½° N. lat., and from 2° of E. to 6° of W. lon.; being about 580 miles in length from north to south, and 370 in its greatest breadth along the southern coast. The English channel and the German ocean flow on the south and east between it and the continent, to which it was probably formerly joined; the narrowness of the straits of Dover, and the perfect analogy between the chalky cliffs of the opposite shores, seem to prove this supposition. The North sea washes its northern shores, while the Irish sea, St. George's channel and the Atlantic ocean, complete the circle, and separate it from Ireland on the west. The shape of Great Britain is irregular, the outlines being much indented by the sea. This gives it a great extent of coast, and many excellent harbors, in proportion to its superficial area. Including these windings, the circuit has been estimated at 1800 miles, and the whole surface at 87,000 square miles. According to the census of 1821, the whole population of Great Britain was 14,391,631. This gives 165 persons for each square mile—a greater comparative population than that of any of the large European states, except the Netherlands. If we adopt that of G. Britain for unity, the ratio stands thus:

Great Britain,	1,000
Netherlands,	1,297
France,	,873
Germany,	,824
Austrian Empire,	,661
Prussia,	,555
Spain,	,352

The first census was taken in 1801, when the population was found to be 10,942,646; in 1811 it amounted to 12,596,803. The census of 1821 gives 2,429,630 houses, occupied by 2,941,383 families, of which 978,656 were employed in agriculture, 1,350,239 in manufacture or trade; families not included in the two preceding classes, 612,488; males, 7,137,018; females, 7,254,613. The number of acres in Great Britain is 57,952,489; of these, 34,397,690 are cultivated, 10,100,000 uncultivated, 13,454,794 unprofitable. The following calculations of baron Dupin, show the comparative amount of animate and inanimate forces applied to agriculture and the arts, in Great Britain and France, based on a population of 15,000,000 for the former, and of 31,800,000 for the latter.

FRANCE.

	men.
Human agricultural power,	8,406,038
Commercial and manufacturing,	4,203,019

GREAT BRITAIN.

	men.
Human agricultural power,	2,132,446
Commercial and manufacturing,	4,264,893

Reckoning the labor of other animals, we find the whole animate power applied to agriculture as follows:

FRANCE.		men.
Horses,	1,600,000 =	11,200,000
Oxen, asses, &c.,	7,213,000 =	17,672,000
Human power, as above,		8,406,038
Total animate agricult'l force,		37,278,038

GREAT BRITAIN.

		men.
Horses, ...	1,250,000 =	8,750,000
Oxen, asses, &c.,	5,500,000 =	13,750,000
Human power, as above, ...		2,132,446
Total animate agricult'l force,		24,632,446

The total human force applied to agriculture in G. Britain is, therefore, to the total agricultural force, nearly as 1 to 12; while in France, the ratio is as 1 to about 4½. We obtain similar results from an examination of the animate force applied to manufactures and commerce. The human force in France is 4,203,019 working men; 300,000 horses employed in these branches, carry the whole animate force to 6,303,019 men. In G. Britain, the human force is 4,264,893 men; allowing for the power of 250,000 animals, the whole animate force is 6,014,893. The total animate force of France is 43,581,057 men; of Great Britain, 30,647,339, or of the whole United Kingdom (allowing for Ireland an agricultural force of 7,455,701 men, and a commercial and manufacturing force of 1,260,604), 39,363,644 effective laborers. To these animate powers should be added, in both countries, the inanimate powers, or the force supplied by wind, water and steam. The total number of mills in France has been computed at 76,000, of which 10,000 are wind-mills; the total force of hydraulic machines employed for forges, furnaces, and machinery of every kind, is equal to the third part of that of the 10,000 wind-mills; the wind employed in navigation is equivalent to the power of 3,000,000, and the steam engines to that of 480,000 men turning a winch. Besides the wind-mills, hydraulic machines, &c., the steam engines of Great Britain are calculated to exert a moving power equal to that of 6,400,000 men. We have, then, the inanimate powers of the two countries as follows:

FRANCE.

	men.
Mills and hydraulic engines, . .	1,500,000
Wind-mills, ...	253,333
Wind and navigation, ...	3,000,000
Steam engines, ...	480,000
Total, ...	5,233,333

GREAT BRITAIN.

	men.
Mills and hydraulic engines, . .	1,200,000
Wind-mills, ...	240,000
Wind and navigation, ...	12,000,000
Steam engines, ...	6,400,000
Total, ...	19,840,000

If we add to this 1,002,667 for Ireland, the total inanimate commercial and manufacturing force of the United Kingdom is equivalent to 20,842,667 men; nearly four times that of France. The total population of the British empire is estimated as follows:

Great Britain and Ireland, . . .	21,380,000
Islands in the British seas,—Man, Guernsey, Jersey, &c., ...	90,000
Other European dependencies, Gibraltar, Malta, &c., ...	140,000
The Ionian Isles (under her protection), ...	227,000
British India, ...	83,000,000
Ceylon and other settlements in the Indian ocean, ...	1,200,000
Indian tributaries and allies, .	40,000,000
Colonies and settlements in Africa, ...	243,000
British dominions in N. America, about	1,000,000
West Indies and S. America, . .	810,000
Australia, &c.—New South Wales, Van Diemen's land, &c.	50,000
Total, ...	148,140,000

The kingdom of Hanover, with a population of 1,582,000, belongs not to the British empire, but to the male line of the present royal family. Thus her authority extends over two thirds of the globe in reference to longitude; and it is literally true that the sun never sets upon her possessions; for within this vast range, various places have noon and midnight at the same moment. Stretching also from the arctic circle to the 33d degree of south latitude, the four seasons are experienced within her dominions at the same time. "This ambitious power," says Dupin, "presents a spectacle unexampled in history. In Europe, the British empire borders on Denmark, Germany, the Netherlands and France, in the north; on Spain, Sicily, Italy and Turkey, in the south; it commands the outlet of the Black sea and of the Baltic. In America, it touches Russia and the United States, and stands in presence of the new republics of the south. Between these two continents, and on the route from both of them to Asia, she holds the rock where her hands have chained the modern Prometheus. In Africa, she holds in check the Barbary powers, and watches over the safety of the negro nations. Beyond, where the Portuguese found only a watering place, and the Dutch constituted a plantation, she has created a new British people. The conquests of her merchants in Asia begin where those of Alexander ended, and where the Roman *Terminus* never reached. From the banks of the Indus to

the frontiers of China, the country is ruled by a mercantile company, in a narrow street of London. Thus, by the vigor of her institutions, and the perfection of her arts, an island, which, in the Oceanic Archipelago, would hardly rank in the third class, extends the influences of her industry and her power to the extremities of four divisions of the world, and, in the fifth, peoples and civilizes regions, which will follow her laws, speak her language, adopt her manners, her commerce, her arts and her literature. This immense dispersion of colonies, which would ruin any other nation, constitutes the strength of the British empire." This supplies her with raw materials, consumes the manufactured articles, into which her industry converts them, and maintains that immense commerce, which, in 1823, employed 165,473 sailors, and 24,542 ships of 2,506,760 tons. British commerce began to rise into importance during the reign of Elizabeth, and now surpasses all that has been recorded of any nation in the annals of mankind. The number of vessels employed in the coasting trade is very great, and lately exceeded 10,000, carrying a burthen of more than 1,250,000 tons. No very correct estimate can be formed of the internal commerce. The following table, from parliamentary documents, shows the amount of imports and exports for the three years designated:

Years ending 5th January.	*Value of Imports at the official valuation.*	*Value of Exports at official valuat.*		*Total Exports.*	*Dom. Prod. and Manuf. exported, acc. to declared value.*
		Domestic produce and manufactures.	Foreign and colonial mer'dise.		
1827	£37,686,113	£40,965,735	10,076,286	51,042,022	£31,536,723
1828	44,887,774	52,219,280	9,830,728	62,050,008	37,182,857
1829	45,028,805	52,797,455	9,946,545	62,744,000	36,814,176

The number of vessels entered inwards and cleared outwards in 1829 (including the repeated voyages), was as follows:

INWARDS.				OUTWARDS.			
British.		*Foreign.*		*British.*		*Foreign.*	
Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
13,436	2,094,357	4,955	634,620	12,248	2,006,397	4,405	608,118

The exports to India and China for the same year amounted to £5,212,353; the imports from those countries, to £11,220,576. The number of horses in Great Britain is reckoned at a million and a half; of cattle, five millions and a half. The number of sheep in England and Wales has been estimated at 26 millions; their annual produce of wool at 400,000 packs, of 240 pounds each. Adding those of Scotland, the total number in Great Britain is about 35 millions. The amount of wool imported in 1827 was 15,996,715 lbs; in 1828, 29,142,290; in 1829, 30,246,898, of which Germany supplied about one third and Spain one tenth. The articles imported to the greatest amount in 1821, 1822, 1823, were wood for building, tallow, tea, coffee, indigo, flax, raw silk, wool and cotton. The principal articles of export for the same years were iron and copper, cotton manufactures, cotton yarn, cutlery, refined sugar, linen and woollen goods. The most valuable mineral productions are found in the western and northern parts of the island, while the southern and eastern parts, being composed of secondary formations and alluvial soil, do not present any valuable substances. Iron, lead, copper, and particularly tin, are the principal metals. The latter is found in the south-western part of the island, and employs about 10,000 persons, to whom it yields a yearly value of half a million. Coal is the most valuable and abundant of the productions of the mineral kingdom in Great Britain. The whole property created annually in the U. Kingdom from mines and minerals, has been estimated by doctor Colquhoun at nine millions. The chief manufactures of Great Britain are of wool, cotton, linen, silk, leather, glass, pottery and metallic wares. The fabric of woollens, of different kinds, is the most ancient, and may be considered as the staple manufacture of the country. Its prosperity may be dated from the reign of Edward III. It is chiefly confined to the southern division of the island, and, including the various articles made of wool, is stated to employ half a million of people, while the value of the articles annually produced is about £18,000,000. The cotton manufacture affords an example of unparalleled rapidity of success. Unknown till the middle of the 17th century, and of not one hundredth part of its present extent at the commencement of the 18th, it is now unrivalled in any other nation. Manchester,

Glasgow and Paisley may be considered as the principal centres of this branch of industry. The application of machinery has carried it to such an extent, that, notwithstanding the cheapness of the articles produced, the total value is estimated at £20,000,000, and the number of individuals employed at from 500,000 to 600,000. Linen was early established as a staple manufacture of Great Britain, but has now been superseded, in a measure, by that of cotton, the annual value of the whole not exceeding £2,500,000. Great Britain is more celebrated for hard ware, and metallic articles in general, than for any other branch of industry. These and the woollen manufactures employ great quantities of native materials, while others, as cotton and silk, depend wholly on the growth of other countries. The total annual value of the metallic manufactures is estimated at about £18,000,000, employing 400,000 people. Large quantities of silk goods are made in London, and other places near the centre of England, estimated to be worth annually £4,200,000, and to employ 70,000 people. Leather is another important branch of industry, and, including the articles into which it is wrought, has been stated to amount to £10,000,000 annually, and to employ 300,000 workmen. Glass, earthen ware, paper, hats and porcelain, are important articles of industry. Breweries, distilleries, salt-works, copperas manufactories, &c., with those above mentioned, carry the annual production of the manufacturing industry in the United Kingdom to the amount of £114,000,000. In addition to these sources of industry, the fisheries employ great numbers of sailors, and are estimated to yield the annual value of two millions, exclusive of the colonial fisheries of Newfoundland. The total amount of new property annually created, has been estimated, by doctor Colquhoun, thus:

Agriculture,	£216,817,624
Mines and minerals,	9,000,000
Manufactures,	114,230,000
Inland trade,	31,500,000
Foreign commerce and shipping,	46,373,748
Coasting trade,	2,000,000
Fisheries,	2,100,000
Banks (chartered banks and banking establishments),	3,500,000
Foreign income,	5,000,000
Total,	430,521,372

The net revenue, for the years ending October 10, 1828 and 1829, was as follows:

	1828.	1829.
Customs,	16,358,170	15,961,206
Excise,	17,905,978	17,904,127
Stamps,	6,575,318	6,704,792
Post office,	1,387,000	1,396,000
Taxes,	4,836,464	4,905,886
Miscellaneous,	556,171	600,848
Total,	£47,619,101	47,472,659

The revenue, for the year ending January 5, 1829, was £55,187,142:—total expenditure, 49,336,973; principal items—

Dividends, interest and management of the public funded debt, and interest on exchequer bills,	£28,095,506
Trustees for naval and military pension money, and for bank of England,	1,692,870
Civil list,	1,057,000
Army,	8,084,042
Navy,	5,667,969
Ordnance,	1,446,972
Miscellaneous, &c.,	3,292,612

(For an account of the poor rates,—in 1827, £7,784,351,—see *Poor Rates.*)

The funded debt, January 5, 1829, was £772,322,540. At the close of the great European war (1815), the army immediately belonging to the empire amounted to 640,000 men; the total number in British pay exceeded a million. The navy, at the same period, included more than 1000 vessels, manned by 184,000 seamen. The army, in 1828, consisted of 90,519, of which 26,888 were in Great Britain, 40,579 in the colonies, and 23,112 in Ireland. The E. India company has 276,281 troops. The naval force, in 1829, consisted of 610 vessels; of which 131 were ships of the line, 149 frigates, 172 corvettes, 155 brigs. 179 of these ships were in service. The *personnel* was composed of 48 admirals, 65 vice-admirals, 68 rear-admirals, 487 captains, and 30,000 sailors.—The members of the different religious denominations in the United Kingdom, in 1821, were,—

Episcopalians; with 6 archbishops, 42 bishops; 11,736 parishes,	13,561,219
Presbyterians; 69 presbyteries, 839 parishes,	1,800,000
Catholics; 4 archbishops, 23 bishops, 113 monasteries,	5,200,000
Methodists; 1,657 preachers,	460,000
Dissenters,	1,350,000
Jews,	12,000

The universities are those of

		Students in 1828.
Oxford,	founded 1229	5,009
Cambridge,	1279	4,830
Edinburgh,	1581	2,242

Dublin,	founded 1591	1,254
Glasgow,	1454	609
Aberdeen,	1471	218
St. Andrew's,	1411	180
London,	1829	437
King's College,	1829	

The orders are, 1. the order of the garter (q. v.); 2. the order of the thistle for Scotland, founded 787, restored 1540; 3. the order of St. Patrick for Ireland, 1783; 4. the order of the Bath (q. v.), founded 1399, revived 1725, and in 1815 divided into three classes—grand crosses, commanders and knights. The title of the sovereign is "king of the United Kingdom of Great Britain and Ireland, defender of the faith, duke of Lancaster and Cornwall, duke of Rothsay, duke and prince of Brunswick-Luneburg, king of Hanover, sovereign protector of the Ionian Isles." The eldest son inherits the title "duke of Cornwall," and receives that of "prince of Wales" by letters patent. The present sovereign is William IV (Henry), born August 21, 1765, third son of George III (q. v.), late duke of Clarence and St. Andrew's, earl of Munster; married, July 11, 1818, Adelaide (Louisa Theresa), princess of Saxe-Meiningen, born August 13, 1792; ascended the throne June 28, 1830. No children. The royal brothers and sisters are, 1. Charlotte (Augusta Matilda), born 29th September, 1766, queen dowager of Würtemberg. 2. Edward Augustus, duke of Kent, who died in 1820, left, by his wife, Victoria, princess of Saxe-Coburg, born August 17, 1786, a daughter, Alexandrina Victoria, born May 24, 1819, who is heiress presumptive to the British crown. 3. Augusta Sophia, born November 8, 1768. 4. Elizabeth, born May 22, 1770, dowager landgravine of Hesse-Homburg. 5. Ernest (Augustus), born June 5, 1771, duke of Cumberland and Tiviotdale, earl of Armagh, married, May 29, 1815, Frederica (Caroline Sophia Alexandrina), princess of Strelitz, born March 2, 1778. Their son, George (Frederic Alexander Charles Ernest Augustus), born 27th May, 1819, is heir presumptive to the crown of Hanover. 6. Augustus (Frederic), born Jan. 27, 1773, duke of Sussex (q. v.), &c., married, April 3, 1793, lady Augusta Murray: the marriage was declared invalid in 1801. 7. Adolphus (Frederic), born February 24, 1774, duke of Cambridge, &c., governor-general of Hanover, married, May 7, 1818, Augusta (Wilhelmina Louisa), daughter of the landgrave of Hesse-Cassel, born July 25, 1797. Their children are George (Frederic William Charles) and Augusta. 8. Maria, born April 25, 1776, married the duke of Gloucester, uncle to the king, July 22, 1816. 9. Sophia (Matilda), born Nov. 5, 1777.

The following sovereigns have reigned in England since the conquest:

1. NORMANS. William I, the Conqueror, 1066—1087. William II, died 1100. Henry I, d. 1135. Stephen, d. 1154.

2. PLANTAGENETS. Henry II, d. 1188. Richard I, 1199. John, Lackland, d. 1216. Henry III, d. 1272. Edward I, d. 1307. Edward II, d. 1327. Edward III, d. 1377.

3. LANCASTER. Richard II, d. 1399. Henry IV, d. 1413. Henry V, d. 1422. Henry VI, d. 1472.

4. YORK. Edward IV, d. 1483. Edward V, d. 1483. Richard III, d. 1485.

5. TUDOR. Henry VII, d. 1509. Henry VIII, d. 1547. Edward VI, d. 1553. Mary, d. 1558. Elizabeth, d. 1603.

6. STUART. James I, d. 1625. Charles I, beheaded 1649. (Republic, 1646. Oliver Cromwell, protector, 1653—1658. Richard Cromwell, protector, retired from the protectorate 1659.)

STUARTS RESTORED. Charles II, d. 1685. James II, deposed 1688. Mary, d. 1695, and William III (of Orange), d. 1702. Anne, d. 1714.

7. BRUNSWICK. George I, d. 1727. George II, d. 1760. George III, d. 1820. George IV, d. 1830. William IV.

Great Britain and Ireland (or *the Three United Kingdoms of England, Scotland and Ireland*), *History of.* The name *Great Britain*, for England and Scotland united, was used under James I, but first became common under queen Anne. England was little known before it was visited by the Romans, who made it a Roman province, under the name of *Britain.* (See *Britain.*) When the Romans were pressed on all sides by the irruptions of foreign nations, Valentinian III, in 426, withdrew his legions from Britain, and left the Britons to their fate. Having become unaccustomed to war, during their long subjection to the Romans, they could not withstand the Scots and Picts, and sought assistance from the Saxons dwelling near the mouth of the Elbe, who, under their leaders, Hengist and Horsa, entered England, and entirely expelled the Scots, after which they sought to make themselves masters of the country. Being continually recruited by fresh crowds of their countrymen, especially the Angles, they finally reduced the Britons, who long defended themselves, particularly under king Arthur, to submission. The unhappy surviving Britons were obliged to confine themselves to the small province of Cambria, now

Wales, or to retire to Armorica, in France, which received from them the name of *Bretagne*. The Anglo-Saxons established seven small states, the governors of which were called *kings*, but still continued in close connexion, and held general assemblies, in which, whatever concerned the whole was discussed and decided upon. From the year 598, the Christian religion was gradually introduced among them. Egbert, king of Wessex, in 827, united all these states under the name *England*. His successors were obliged to pay a yearly tribute (*danegeld*) to the Normans, or Danes, as they were called in England, who, in their naval expeditions, made incursions upon the English coast, and had conquered a part of the country. Alfred the Great roused anew the courage of his nation, attacked and expelled the Danes, afterwards engaged them by sea, and maintained himself in possession of his kingdom. His death (901) was a great loss to England, which was again attacked by the Danes, and, in 1001, conquered. The Danes governed England, under their king Canute and his sons, forty years. They were, however, driven out in 1041, and the Anglo-Saxon prince Edward the Confessor ascended the throne of England. He prepared a code from the laws of the Saxons and Danes. After Edward, the last of the Anglo-Saxon kings, had died, in 1066, without children, Harold, count of Wessex, was acknowledged king by the nation. But William, duke of Normandy, who had a remote title to the English throne, landed in England, with 60,000 men, and the battle of Hastings, October 14, in which Harold was slain, made him master of the whole country; from this he received the surname of the *Conqueror*. William gave all important offices to his countrymen. Several insurrections of the dissatisfied English gave him a pretext for administering his government with great severity. He introduced into England the feudal law, and imposed heavy taxes. William, as duke of Normandy, owed allegiance to the king of France, who was jealous of the increasing power of his vassal. Thus began the wars between France and England, which lasted nearly 400 years. William died 1087. He governed England wisely, but with great severity. He was succeeded by his second son, William II, surnamed *Rufus*, who was equally severe. Then followed his third son, Henry I, who violently deprived his eldest brother, Robert, of the duchy of Normandy, and restored to the English many of their ancient privileges, but was ready to sacrifice every thing to his avarice and ambition. He had no sons, and therefore caused his daughter Matilda, who was married to Geoffrey, count of Anjou, to be acknowledged, as his successor, by the nation. Notwithstanding this settlement, after the death of Henry, 1135, the son of his sister Adela, Stephen, count of Blois, was acknowledged king. He was succeeded, in 1154, by the son of the above-mentioned Matilda, Henry II, surnamed *Plantagenet*, count of Anjou. Henry II was one of the most powerful kings of England. He received Normandy from his mother, inherited, from his father, Anjou, Maine and Touraine, and obtained by his wife, Eleonora of Guienne (whom Louis VII, king of France, had divorced), Guienne, Poitou, and other provinces; so that he possessed nearly a fourth part of France, and far more than at that time belonged immediately to the king of France. But this connexion of the king of England with France, was the occasion of frequent wars between the two countries. The long reign of Henry II (he died 1189) was indeed distinguished by his warlike enterprises, but was much disturbed, particularly towards its close, by his disputes with the church, and by the rebellion of his sons. The successor of Henry was his son Richard the Lion-hearted, so called because of his extraordinary courage, displayed particularly in a crusade against the Saracens. That he was beloved by the nation, is proved by the fact, that they melted the church plate, to raise the sum of 150,000 marks of silver, the ransom demanded for his release by the duke of Austria, who had imprisoned him while on his return from the East. During Richard's absence, disturbances had arisen in England, and an unfortunate war with France. His brother John, a weak, tyrannical and passionate prince, succeeded him, 1199. He lost Normandy and other provinces in a war with France. In his contest with the pope, he was obliged to submit to great humiliations, and was compelled by his subjects, 1215, to give them the great charter (*Magna Charta*). (q. v.) This charter was afterwards extended and confirmed by several kings. John, however, had no intention of adhering to its provisions, but, as soon as he could collect a sufficient force, renewed the war against his subjects, and died, in the midst of civil broils, in 1216. His son, Henry III, had a long, but, through his own weakness, an

unquiet reign. Under him was established, 1265, the lower house of parliament, or the house of commons. His son and successor, Edward I, was one of the most distinguished in the line of English kings. He was wise and brave. His judicious severity repressed the disorders with which the kingdom abounded, and he made such improvements in the laws, that he has been called the *English Justinian.* He conquered Wales, and made great, but eventually unsuccessful attempts to subdue Scotland. Though arbitrary and sometimes unjust, he was a great benefactor to his nation. His son and successor, Edward II, who reigned from 1307 to 1327, was a weak prince, governed by favorites, wholly unable to rule, and at last dethroned and most barbarously murdered, by a faction, at the head of which was his queen, who had deserted and dishonored him. His son and successor, Edward III, who reigned from 1327 to 1377, was one of the ablest kings of England. He released himself from the supremacy of the pope, and conquered a considerable part of France, on which account he took the title of *king of France*, which his successors retained till 1801. These acquisitions were in part lost, during Edward's life, but almost entirely by his weak grandson and successor, Richard II (1377—1399), who was dethroned, and died in imprisonment, probably of starvation. His successor was Henry, duke of Lancaster (1399—1413), who had been banished by Richard, but, taking advantage of the disturbed state of the kingdom, had returned, excited a civil war, and obtained possession of the throne. His reign was much disturbed by civil commotions. His government was severe, but wise. He is said to have suffered much from remorse for the crimes which gained him the crown. His son, Henry V (1413—1422), was a prince of distinguished bravery and ability. He invaded France, and fought the famous battle of Agincourt. (q. v.) He died at the age of 34. His son, Henry VI (1422—1461), was a weak prince, whose reign, after the expulsion of the English from France, which was owing in a great measure to the famous Joan of Arc (see *Joan of Arc*), was continually disturbed by civil contentions. The claims of the duke of York to the throne made the country a constant scene of civil war during the latter years of his reign; and in 1461, Edward IV (duke of York) obtained possession of the throne, Henry having been driven into Scotland, and afterwards taken prisoner and confined in the Tower. Edward reigned till his death, 1483, with the exception of about six months, during which Henry was restored to the throne. Edward was brave, but cruel, showy, and addicted to pleasure, capable of activity in great emergencies, but deficient in judgment. After his death, his brother Richard, duke of Gloucester, became protector, as his son Edward V was a minor in his 13th year. Both Edward, and a younger brother, Richard, were soon after murdered by the protector, who usurped the throne, and reigned from 1483 to 1485, when he was dethroned by Henry, earl of Richmond, who was at the head of the Lancastrian party. The long wars occasioned by the rival claims of the houses of York and Lancaster, which had convulsed England during several reigns, were called the *wars of the roses*, on account of the cognizance of one of the parties having been a white rose, that of the other a red one. Henry VII (1485—1509), by his marriage with Elizabeth, of the house of York, united the interests of the two families, which had been almost destroyed by battles, death and public executions. Notwithstanding some disturbances, England enjoyed a state of comparative quiet during this reign, which was in the main fortunate at home and honorable abroad. This prince was politic and able, but severe, suspicious and avaricious. With him began the line of the house of Tudor (the name of Henry's grandfather), which ended with Elizabeth. His son, Henry VIII (1509—1547), was active, arbitrary, rapacious and violent. He would have had a great influence in the quarrels between Charles V and Francis I, had he been more decisive, and not changed continually from one party to the other, in compliance with the counsel of his prime minister, cardinal Wolsey, who was guided only by his own interest. The possession of Calais gave the English the means of landing in France whenever they wished; but Henry's conquests in that country were soon lost, and Calais alone remained to him. The reformation in the church in Germany, likewise produced an excitement in England. Notwithstanding strict prohibitions, the writings of Luther were much read there. Henry VIII, not without learning, particularly in scholastic theology, undertook to defend the seven sacraments of the Roman church, in a work composed by himself, which Luther refuted with vehemence. For this, pope Leo X honored the king with the title of *defender of the*

faith—a title which the English kings, though Protestants, still bear. The authority of the pope had been till now very great in England, and the amount of money yearly flowing to Rome from this country had been considerable. This ceased when king Henry (1534) quarrelled with the Roman church, because the pope, from fear of the emperor, refused his consent to the divorce of Henry from his wife, Catharine of Arragon, a relation of Charles V. Henry, by degrees, suppressed all the convents and abbeys, and declared himself head of the church, but still retained the main doctrines of the Roman Catholic faith. The reformation, in the mean time, found many adherents; and this difference of opinion, as well as the confiscation of church property, occasioned much disturbance. Henry endeavored, as his father had done, to increase the royal authority. During this reign, the first ship of war was built in England. Henry established the first fleet; but, in order to man it, he was obliged to take into pay foreign sailors belonging to the ships of the Hanse towns, the Genoese and the Venetians, who at that time were the most experienced sailors. He instituted an admiralty-office. After his death (1547), his three children followed him in succession. Edward VI (1547—1553), a prince of a mild character, and a great friend to the reformation, laid the foundation of the English Episcopal church. His half-sister Mary (1553—1558) acted in an entirely opposite spirit. To secure foreign assistance, she married Philip II of Spain. This union, which did not procure the expected advantages to either party, but produced much discontent in England, involved the nation in a war with France, which occasioned the loss of its last possession there, Calais, in 1558. Mary died, 1558, hated for the many executions, by which she had endeavored to suppress the reformation in England. The nation was filled with joyful expectation when Elizabeth came from the prison, in which her life had often been in danger, to the throne, and fulfilled the hopes of the people. Her firmness and prudence raised her country to a greatness till then unknown, and established her own power. She skilfully moderated the violence of the opposing parties, and introduced the reformation under the form of Episcopacy, which still exists. She awakened in the nation application to the arts, encouraged particularly woollen manufactures, by the reception of many workmen driven away from the continent on account of their religion, and favored foreign commerce. She often travelled through the country, to obtain an acquaintance with the wants of her subjects. By supporting the reformers in France, and those in the Netherlands against Spain, she acquired influence abroad. Her relations with Spain compelled her to maintain a great naval force. In 1606, her fleet consisted of 42 ships, manned with 8500 sailors. The greatest English seamen, at this time, were sir Francis Drake, who first after Magellan sailed round the world, and sir Walter Raleigh (q. v.), who established the first English colony in North America. Philip II, king of Spain, whom Elizabeth had offended in many ways, in 1588, fitted out against her the great armada, to which the pope gave the name of *invincible*. Without a regular engagement, more than half this fleet was destroyed by storms, and in detail. A blot in Elizabeth's reign, is the execution of the unfortunate, though not entirely guiltless, queen Mary, of Scotland. With Elizabeth, who died in 1603, ended the line of princes of the house of Tudor. James, king of Scotland, sprung from the old Scottish house of Stuart, son of queen Mary, who was beheaded, 1587, was the only near relation of Elizabeth (his great-grandmother, Margaret, was daughter of Henry VII of England, grandfather of Elizabeth), and was designated by her, a short time before her death, to succeed her on the English throne. The union of Scotland with England under the government of one king, which bloody wars had failed to effect in preceding times, was now accomplished in a peaceful manner. England received a Scottish king for her sovereign. James I (1603—1625) was acknowledged without opposition; but a prince of so little energy was ill qualified to fulfil the expectations, which were formed at the beginning of his reign. Instead of securing the advantages which political circumstances might have afforded him, particularly at the time of the peace concluded with Spain (1604), he employed himself with theological controversy, and in writing books. He had been educated, against the will of his mother, in the Protestant religion, according to the doctrines of the Presbyterian church of Scotland; but when he became king of England, he changed his sentiments, and favored, as Elizabeth had done, the episcopal church, whilst he discountenanced the Presbyterians (Puritans). This conduct, as well as his endeavors to extend the royal prerogative, and to annihilate the freedom of parliament, and the rights of the nation,

was the origin of the court and country parties—in the beginning more religious than political parties—which afterwards, as tories and whigs, often divided, and still divide, public opinion in England. In this state of things, hardly any thing was done for the good of the country. James himself could not accomplish an entire union between his kingdoms, which merely had the common name *Great Britain*. England and Scotland retained each its own constitution and parliament. In this uncertain state, James left both his kingdoms (1625), to his son Charles I. This monarch (1625—1649), educated in the despotic sentiments of his father, himself of an intractable spirit, yet led astray by favorites, wished to extend still further the royal prerogative, and to make the Episcopal church universal; both attempts failed, and prepared his fall. The dislike of the people towards him was increased by the unsuccessful wars with Spain and France. The last was concluded by a peace (1629), by which England, who had previously been alone in possession of North America, gave up Canada to France. The parliament opposed the attempt of the king to levy taxes at his own pleasure; and he found himself, at last (1641), compelled to renounce his royal prerogative of dissolving the parliament. In this parliament, Oliver Cromwell (q. v.) had distinguished himself as one of the discontented. He soon became the head of the army, which the parliament raised against the troops of the king. Charles, every where overcome in the field, fled in his misfortunes to the Scots, by whom he was delivered up to the parliament, for the sum of £400,000, and was condemned to death by a high court named by the commons, and on the 30th of January, 1649, publicly beheaded. This proceeding did not occasion any political excitement abroad, but only a literary attack from some writers in France and the Netherlands, who were answered by Milton, then Cromwell's private secretary. After the death of Charles, the parliament nominally governed; but it was Cromwell who, in secret, guided all. Charles II, son of the murdered king, supported by the Scots, entered England, but, being defeated by Cromwell, at Worcester (1651), he was obliged to seek an asylum in a foreign land. Cromwell soon after made the parliament submissive to his will, and undertook the government delegated to him by the army. Under the title of *protector*, he governed with absolute power. He was feared abroad; he raised England, particularly her naval power, to a high rank. He ended a two years' naval war with the Netherlands (1654), by an advantageous peace, which obliged the United Provinces to yield to England the command of the sea. By an equally fortunate war, he wrested from Spain the island of Jamaica, and gained for England Dunkirk and Mardick. He died, 1658, in the height of his power. His son, Richard Cromwell, was immediately named protector; but his aversion to this dignity, and the multitude of parties which had arisen, induced him to resign the government and retire into private life. A state of anarchy now took place, which was ended by the royal party, supported by the army under general Monk, recalling Charles II, who ascended the throne of his father May 29, 1661. Charles II (1661—1685) immediately did all that had cost his father his life, and even more. In the beginning, so large a revenue had been settled upon him, that in this respect he was independent of the nation; but his inclination to prodigality betrayed him into selling Dunkirk and Mardick to France. A war with Holland, begun without sufficient ground, in the course of which the bold admiral Ruyter burned the English ships of war upon the Thames, was concluded by the peace of Breda (1667), to the advantage of the Dutch. A second war with this same nation, which was very prejudicial to the commerce of England, was concluded by the peace of Westminster (1674). There could not fail to be some discontented with the continually increasing despotism of the king. The parties formed under James I were now called tories and whigs. To guard against the restoration of the Catholic religion, which James, duke of York, the brother of the king, openly professed, parliament, in 1673, passed the test act (q. v.), by which Catholics were excluded from all public offices, and, to guard against arbitrary arrests, they passed the *habeas corpus* act. (q. v.) Charles was greatly influenced in his measures by the wishes of France. During the four last years of his life, he governed uncontrolled, and without a parliament. The English naval power, which, under him, had increased to 83 ships, among which were 58 ships of the line, declined during the latter part of his reign. James II, who succeeded his brother in 1685, and was deposed in 1688, was an excellent seaman, and paid much attention to the navy, which he increased, during three years, to 173 ships. His other acts were unwise, and most ruinous to himself. He wished to

make the royal authority unlimited, and to introduce again the Catholic religion. He met with great opposition. When his second Catholic wife bore a son, the whigs called to their assistance his Protestant son-in-law, William of Orange, stadtholder of the United Provinces. Supported by Holland, William landed in England (November, 1688); hardly a drop of blood was shed in this revolution. James fled with his family to France. The crown was now (1689) settled on the prince and princess of Orange, but the sole administration of the government was to remain in the hands of William, with certain limitations of the royal power, fixed by the Declaration of Rights and the Bill of Rights. By this change in the administration, the government received a form more suitable to the good of the country. From this time, England obtained far greater consideration than she had before possessed among the governments of Europe. William still continued stadtholder of the United Provinces, from whence arose a closer union of the countries, which has continued even down to our times, to the great advantage of England. Under William, the Presbyterians (Puritans), till then continually persecuted, received entire freedom of conscience, the liberty of the press was established, and, in 1694, the bank of England, in London, that masterpiece of financial knowledge, instituted, with a capital of £1,200,000. A loan of £900,000 was made to the government, by the bank, which was the beginning of the funded English national debt. During the war with France, begun in 1689, and concluded by the peace of Ryswick, Sept. 20, 1697, the French fleet suffered, in 1692, a severe defeat at the Hague, after which the naval power of England increased. At the death of William (1702), the English navy consisted of 225 ships. As William left no children, Anne (q. v.), the sister of his deceased wife, second daughter of James I, became queen. The reign of Anne (1702—1714), although she was a weak sovereign, is considered among the most splendid periods of English history. The war with France, on account of the Spanish succession, brought on by the alliance of William with Austria, was declared May 15, 1702, and was conducted with much success, by land, under Marlborough, and also by sea. Gibraltar was taken (1704), and, during this war, the naval power of Spain was almost annihilated. During her reign was likewise accomplished (1707) the union of England and Scotland into one kingdom, under the name of *Great Britain*, which had been attempted in vain by many preceding kings. The two nations received equal rights and liberty, and a common parliament was established, that of the Scots being abolished. Soon afterwards, the succession to the English throne (as Anne, who had been married to prince George of Denmark, had lost all her children, who were numerous) was, by an act of parliament (1708), secured to Sophia, widow of the elector of Hanover, granddaughter of James I, and to her descendants, to the exclusion of the families of Savoy and Orleans—Catholic houses nearly connected with the family of Stuart. The peace of Utrecht (1713), the work of queen Anne, or rather of the party connected with the government, put an end to the war of the Spanish succession, which had been carried on with success. By this peace, England received from France many possessions in North America; from Spain, Gibraltar and Minorca, and considerable commercial advantages by the *assiento* treaty. Among the many causes that led England to this peace, which many persons censured, was the extraordinary expense occasioned by the war, particularly through the large amount of pecuniary aid furnished to other powers. The English national debt was now increased to more than £50,000,000. England now took the decided stand which she has since maintained in all important events. The quiet which this peace, for a long time, afforded to Europe, produced consequences favorable to England. Industry was again awakened, and all the arts of peace promoted. Anne died Aug. 12, 1714; and, conformably to the act of parliament, George Lewis, elector of Brunswick-Luneburg, son of the above-mentioned granddaughter of James I, immediately ascended the English throne, under the title of George I. This alteration of the government produced a change of parties; the whigs became the court party, and obtained the superiority, and strong measures were taken against the followers of the family of Stuart. Under the wise and prosperous reign of George I (1714—1727), England gained power and consideration; and internal commotions were quickly subdued. The king and his minister, sir Robert Walpole, were both averse to foreign war, and the 13 years of his reign were a period of comparative peace. George died June 22, 1727, at Osnabruck. His son and successor, George II (1727—1760), confirmed all the alliances of his

father, and continued his plan of maintaining the balance of power in Europe. The peaceful policy of Walpole, who still remained at the head of the ministry, was disturbed, in 1739, by a commercial war with Spain, which the nation loudly called for. Notwithstanding the greatly superior force of England, this naval warfare in America was not carried on with the advantage that was expected. Soon after, England was obliged to take part in the war of the Austrian succession (1740), as guarantee of the pragmatic sanction established by Charles VI. At first, she supported her ally, Austria (Maria Theresa, queen of Hungary and Bohemia), secretly and by pecuniary aid; but, after the peace of Breslau (1742), and after Walpole had been compelled to give up his place of prime minister to lord Carteret, an ardent man, and a bitter enemy of France, the English government openly declared against France and her allies. An army, called the *pragmatic*, was assembled in Germany, at whose head George II himself fought against the French, in the battle of Dettingen (June 27, 1743). The English fleet defeated the French at Toulon (Feb. 22, 1744), and retained, afterwards, the command of the sea. During this war, Charles Edward, son of the Pretender, and grandson of the exiled James II, supported by France, made two attempts to land in Scotland. The first was immediately frustrated; in the second (1745), he was at first successful, and gained some advantages, but in 1746 was entirely defeated at Culloden (q. v.), and compelled to flee. The peace of Aix-la-Chapelle (Oct. 18, 1748) ended this war. England received, notwithstanding her successes and superiority, only the promise of France not to support the Pretender again, and to acknowledge the Hanoverian succession, together with some small commercial advantages, which could not be weighed against the great burden of debt incurred by the preparations for war, and by the pecuniary aid given to Austria, Sardinia, Denmark, Saxony, and other German powers. The difficulties which had existed with Spain, from 1739, were accommodated in 1750, by a treaty, in which England gave up the *assiento*, the subject of dispute, on condition of receiving a compensation. Between 1740 and 1744, Anson performed his voyage round the world, and made discoveries of much value for trade and navigation. In the prospect of a long peace, which, however, was soon over, it was thought best to diminish, at least, the interest of the national debt, which debt had now increased to more than £75,000,000. The interest of the greater part was accordingly reduced to 3 per cent. In this manner was formed the *consolidated* or 3 *per cent. stock*, so called. From the £800,000 saved from the interest, and some small additions, was established a permanent fund (sinking fund) for the gradual payment of the debt, but which has often been used for other purposes. Disputes with regard to boundaries in North America, which had not been settled by the former treaty, gave rise, in 1755, to a new war with France, which spread to the continent, where it was known under the name of the *seven years' war*. In this war, England, whose affairs were conducted by the great lord Chatham, from 1758 to 1761, wrested many of her foreign possessions from France, whose naval power was comparatively weak, and obtained great acquisitions in the East Indies, where her forces were commanded by Clive. In the course of this war, George II died (1760), and his grandson George III (1760—1820) succeeded him. Under him the war continued, and, in 1762, Spain took part in it against England; but an end was put to hostilities by the peace of Paris (Feb. 10, 1763). England retained a great part of the acquisitions made in both Indies. She never had conducted a war so prosperously; at the conclusion of it, therefore, no murmur arose at the increase of the national debt, to £145,000,000. The number of the English ships of war was reckoned at 374, the crews at 100,000 men, and the ordnance at over 14,000 pieces. Internal disturbances, occasioned by contests respecting the liberty of the press, frequent changes of ministers, Cook's voyages of discovery, and the war in the East Indies, conducted with various success, are the principal events of the next ten years. After long contests with the colonies of North America, respecting the right of the mother country to tax them, the weak and unwise measures of the ministers led to a war between the parties (1775), in which France (1778), and afterwards Spain, took part. Irritated by the armed neutrality of the northern powers, in 1780, England attacked the United Provinces. Failing in her attempts to subdue the North American colonies, she concluded peace, in 1783, at Versailles. The principal article of the treaty was, that England should acknowledge the independence of the 13 United States of North America. England suffered no important loss by this separation

of her colonies: she was no longer at the expense of protecting them, and gained great advantages from their trade. By this war, the national debt was increased to £240,000,000. With the agitation of the political world, occasioned by the French revolution, begins the latest history of Great Britain. Feb. 1, 1793, the national convention of republican France declared war against England. This soon became a contest for death or life. The exertions of England were extraordinary. Large levies of troops were despatched to the continent, or taken into English pay there; the English naval force was spread over the whole ocean, and was active in both Indies, in the Channel, and in the Mediterranean sea. In 1801, more than £12,000,000 had been furnished to Sardinia, Prussia, Hesse-Cassel, Austria, Portugal, Russia, and the French emigrants; these exertions were increased when, afterwards, Holland and Spain took part with France. The result of the war on the continent was most unfavorable to the coalition. In the mean time, the acquisition of Toulon and Corsica (1793) gave new glory to the British arms, though neither could be held. But almost all the French and Dutch possessions in both Indies were taken by the English. Howe's victory over the fleet at Brest (June 1, 1794); the defeat of the Spanish fleet, off cape St. Vincent (Feb. 14, 1797), and that of the Dutch, near Egmont (Oct. 11, 1797), made the British masters of the sea. They blockaded the hostile coasts and ports, destroyed every where the commerce of the enemy, greatly weakened the naval power of France, and even carried the Dutch fleet to England (Aug. 30, 1799), after the expedition to Egypt had been frustrated by the splendid victory of Aboukir (Aug. 1, 1798), and the foundation of a new coalition laid. At the same time, the British conquered, in the East Indies, their most powerful enemy, Tippoo Saib, took possession of his chief city, Seringapatam, obtained immense treasures, and united the greatest part of the kingdom of Mysore to their possessions. In the mean time, their violations of the rights of neutral vessels, and of the maritime law of nations, had occasioned the forming of the northern coalition, in which Russia, Denmark, Sweden and Prussia were united (1800—1801), to defend the rights of neutrals by force of arms. Hereupon the English adopted hostile measures. But this dispute was soon ended. The head of the northern confederacy, the emperor Paul, died March 23, 1801. Denmark was compelled to resume a peaceful attitude, by the defeat at Copenhagen (April 2). Thus the confederacy was dissolved, a reconciliation was effected without a settlement of the principal point of contest; and the Prussians gave up Hanover, of which they had taken possession. In the mean time, France had been reconciled with all its enemies on the continent, and the public voice in England demanded peace. The national debt had increased to £451,000,000; scarcity of provisions, and the weight of taxes, reduced the people to despair. The object of the war, the restoration of the Bourbons, seemed an impossibility. The new ministry, therefore, at the head of which was Addington, concluded the treaty of Amiens (March 25, 1802), by which, after such great exertions, only small advantages were obtained—the island of Trinidad, the part of Ceylon belonging to the Dutch, and free entrance to the ports of the cape. The nation, however, were much dissatisfied with this treaty. Bonaparte also excited the British pride by new pretensions. England, therefore, declared war against France, May 18, 1803. The French took Hanover, extended to the greatest degree their exclusive system against England, formed an alliance with Holland, the Italian republic, and afterwards with Spain, and threatened England with an invasion. Pitt, who had again joined the ministry, dissipated the fear of the last, by exciting a new war on the continent (1805), which, however, only conducted Napoleon to new conquests and acquisitions; but the English possessed the command of the sea, and the battle of Trafalgar (Oct. 21, 1805), in which Nelson fell, crowned the fame of their arms. Pitt died Jan. 23, 1806. The new ministry (Grenville, Addington, Fox) were inclined to peace; but after the acquisitions which Napoleon had made in the war against Russia and Prussia, and after his decrees of Berlin and Milan, they could not be reconciled to him, without acknowledging his supremacy on the continent. All the endeavors of England, therefore, were directed to maintaining and extending her power upon the sea. The bombardment of Copenhagen, and the seizure of the Danish fleet (September, 1807), increased the enemies of England. Even Russia renounced her alliance. But the offers of peace made at Erfurt, by the emperors of Russia and France, were rejected by the English government, because it would not acknowledge Joseph Bonaparte king of

Spain. Already had an English army, sent to Portugal, compelled the French general Junot, and the Russian fleet lying in the Tagus, to capitulate (Aug. 30, and Sept. 3, 1808). The Spaniards, who had risen against France, were supplied with money, military stores and troops; Cayenne, the island of Martinique, and the Ionian islands as far as Corfu and St. Maura, were conquered; and an expedition (the Walcheren) against Zealand and Flanders was undertaken, but failed (1809); in the next year, however, the islands of Guadaloupe, St. Martin, St. Eustatia, Amboyna, Bourbon and the Isle of France, were taken by the British. Soon after, the mental disorder of the king returning, made a regency necessary, which the parliament conferred upon the prince of Wales. The English government, being determined not to make peace with France till she retired within her former limits, and received again her ancient family of princes, opened the campaign of 1812 with new hopes. England was soon the soul of the coalition which was formed on the continent; the influence of her wealth was felt every where. She pressed with overpowering weight on the sinking power of France in Spain. A new war with the U. States of North America (concluded by the peace of Ghent, Dec. 24, 1814) did not prevent her from applying her strength to the affairs of the continent. The result corresponded to her great exertions. The allies entered Paris. Wellington, after he had delivered Spain from the French, at the head of the united English, Spanish and Portuguese force, crossed the Pyrenees, and advanced upon Bourdeaux and Toulouse. The restoration of the Bourbons followed the expulsion of Napoleon, and the French received a constitution based upon liberal principles. England gave back, without hesitation, all her French conquests, with the exception of Tobago, St. Lucie and the Isle of France. At the same time, she retained, of her Dutch conquests, the cape of Good Hope, Demerara, Essequibo and Berbice; of her Danish, Heligoland; and of her Italian, Malta; and obtained the protection of the Ionian isles. Her acquisitions, in respect to territorial possessions and political importance, were therefore very great; especially as, at the same time, her East Indian dominions were increased by the acquisition of the territories of the king of Candy; so that the whole of Ceylon became subject to the British crown. Hanover likewise received considerable additions, and the name of a kingdom. The return of Napoleon afforded the British arms an opportunity of gaining new fame in the battle of Waterloo, in consequence of which Napoleon gave himself up to the English (July 13, 1815).

1815. The political attitude of England had been, for 23 years, warlike. All the wars of the European continent, against the revolution and against the empire, were begun by England, and supported by English gold. At last, the object was attained: not only was the ancient family restored to the throne, but France was reduced to its original limits, its naval force destroyed, and its commerce almost annihilated. But victory brought bitter fruits even to England, which, after several years of peace, came to maturity. A debt, of which the capital amounted to more than 40 years' revenue of the kingdom, and internal disturbances which threatened the greatest danger, demanded from the ministry the most cautious and judicious measures. The absurd opinion, that war opens such sources of prosperity to a country, as compensate for the resources which it consumes, had been contradicted by experience. Frugality and forbearance from all superfluous expense, particularly from war, have therefore been, since 1815, the first law of the government, by which the policy of England has become as peaceful as it had formerly been warlike. Notwithstanding the English government has formally opposed the principle, maintained by many of the other European powers, that the European association of states has a right to put down by force any attempt on the part of the people of an existing government to overturn it, namely, the right of *armed interference*, as it is called, yet they have carefully avoided going farther than a mere verbal explanation of their views. On the entrance of Canning into the department of foreign affairs, after the suicide of Londonderry (q. v.), the British withdrew from the continental system of politics.

After the termination of the wars with Napoleon, notwithstanding the economy of the government, particularly shown in the reduction of the army, so great a burden was left upon the nation, and the bad harvests of 1816 and 1817 had made the necessities of the manufacturers so urgent, that this class of the nation was reduced to despair. In June, 1819, disturbances began in the manufacturing districts. Meetings were held, in which annual parliaments, and a radical reform in the election of members, were

the great topics of declamation. The well known Hunt was conspicuous on these occasions. The assemblies went so far as to choose delegates for a new parliament; and no one knew what a mob of many thousands might undertake next. Serious measures were therefore adopted. Such a mob at Manchester (Aug. 16, 1819) was dispersed by the authorities of that place, by means of a military force. On this occasion, many persons were killed and wounded. The authorities were reproached, not only with having used force without necessity, but also as having violated the forms of law. Judicial proceedings were instituted against them, which ended with their acquittal. These excitements (see *Radical Reformers*) assumed every day a more dangerous character, and the ministry were compelled to propose to parliament, at the end of the year, extraordinary measures, which, a month before, had been determined upon in Germany for five years. These were adopted by the parliament, to be continued for five years likewise, and consisted of five articles: 1. a prohibition of private military exercises; 2. of the possession of weapons; 3. of the liberty of holding meetings of the people, without the permission of the local authorities; 4. the application of the severe stamp system to pamphlets under two sheets, and a more rigorous punishment of libels, and of seditious or irreligious writings; lastly, 5. the acceleration of judicial proceedings in case of small offences. The death of George III (January 29, 1820) made no change in these respects, though it produced many important consequences. The dangers of radicalism vanished, as peace, the consequent diminution of taxes, the increased demand for manufactures abroad, particularly in Spanish America, better harvests, and cheaper means of living, again improved the situation of the manufacturers. The renewal of specie payments, by which the value of the paper currency was increased, was also of great effect, and was particularly favorable to the manufacturers. The last convulsion of this disorder, was the conspiracy of a band of desperate men, under the conduct of Arthur Thistlewood,—a man who had sunk from a respectable standing by misconduct,—to assassinate all the ministers. They were betrayed. Thistlewood and four of the other conspirators were executed, and four others were transported, for life, to Botany Bay, that great sink of the moral impurity of the mother country. If much revolutionary spirit had really existed in England, and given occasion to these disorders, instead of their having sprung, as they did, merely from want, it would have taken a very dangerous turn, at the time of the trial of the queen. This trial, which was brought on by faults and passions on both sides, and in which all regard to female dignity and princely honor was trodden under foot, gave a new pretext, a new rallying point, to the discontented. It began upon the return of the queen to England (June 6, 1820), by a message to the parliament to inquire into her conduct; whereupon a ministerial motion followed, proposing an injudicious personal penal law (bill of pains and penalties), discreditable to the English legislation. The purport of the bill was, that queen Caroline had forfeited the title, rights and prerogatives of a queen of England, and that her marriage with the king was to be regarded as dissolved. The shameful charges brought against the queen in parliament, were retaliated by the most bitter satire upon the king. The opposition among the people to this measure was so great, that the ministers dared not bring into the lower house the bill passed in the upper. The time was, likewise, too dangerous, as the revolutions in Spain, Portugal and Naples, followed each other in quick succession. The assassination of the duke of Berry (February 13, 1820), the Cato-street conspiracy (February 23), were important symptoms. The crisis in England, however, passed quickly over. The disturbances among the manufacturers ceased, as their wants were alleviated; the popularity of the king was reëstablished by a journey through his dominions; and the queen was almost forgotten when she died, August 7, 1821. (See *George IV.*) But much more serious disorders, in the internal relations of G. Britain, appeared (1822), and showed the consequence of that disproportion, which exists in the British islands, between the great landed proprietors and the actual cultivators of the ground. The property of the soil is in comparatively very few hands. Besides the clergy, who possessed about six thousand estates, and the corporations, whose possessions might be reckoned at an equal number, there were then in England but about twenty thousand landholders. The English law, which gives to the eldest son all the real estate, is itself sufficient to keep together large masses of landed property; but the pressure of war has done still more. In 1786, there were 250,000 landed proprietors. The small farmers are

now, almost without exception, tenants; of whom Mr. Coke alone has 500 around him. In Scotland, the ancient common possessions of the clan have passed to the chief. In Ireland, the ancient proprietors were almost all displaced by the confiscations of Elizabeth, Cromwell and William III, and their landed estates divided among a few English families; so that there mere tenants for life are admitted to vote in the parliamentary elections; otherwise there would be few voters. Besides their own possessions, the clergy in England and Ireland have tithes from almost all real estate. In 1818, the high price of corn had sunk; and, in 1820, the value of money was increased by the renewal of specie payments at the banks; so that ruin threatened the tenantry (in England the strength of the nation, and in Ireland the great mass of the people), from their inability to fulfil the terms of their leases, which had been made when the value of money was less. In England, they expected general poverty. In Ireland, a famine arose, in consequence of a bad harvest. In Scotland, the inhabitants were expelled from their places of residence. One proprietor (in April, 1820) removed 600 families from their farms, in the county of Ross; in the county of Sutherland, the marchioness of Stafford did the same towards 15,000 persons, turning their farms into sheep-walks, for the sake of greater profit. In England, this state of the agricultural population excited far more anxiety than the disturbances of the manufacturing districts, because it affected a more important and energetic part of the nation, and sprung from a deep and permanent cause; but the means proposed to remedy the evil were very various. The ministry pointed out, as the true cause of this evil, the abolition of the income tax by act of parliament, which they had, even in 1816, declared a victory of the rich over the poor; the consequences of which were now developed. By this victory, all personal estate, the revenue from capital and from the colonial possessions, were exempted from taxation; in consequence of which, the burden fell almost entirely upon the working class, and on the consumption of the necessaries of life. The assertions of the opposition, that the distress of the country was the consequence of the excessive taxes, were indeed not without foundation; but all the possible means of saving, particularly the abolition of sinecures, including clerical ones, could have afforded no real remedy, which was to be looked for in a more equal division of taxes,—a measure as disagreeable to the opposition as to the ministerial party. No one even dared to propose the obvious measure, of the reduction of rents, in proportion to the rise in value of the paper, consequent upon the resumption of specie payments by the bank. This increase in value amounted to 15 per cent.; and the rents should have been reduced in proportion. Some proprietors, indeed, did reduce the rents of their tenantry 10, 15, and even 30 per cent., but we cannot say what proportion they bore to those who did not. The landed aristocracy sought to throw the loss upon the other great division of the people, the manufacturers, by keeping up the price of corn, through the means of prohibitory duties upon the import of foreign corn. A source of relief, to which some persons looked, was the reduction of the income of the clergy, which in England must be regarded as excessive, in Ireland as a useless burden upon the people. In England, the revenue of the Episcopal church is too great, compared with the number of the people, and its distribution, likewise, is very unequal and unjust. The whole amount has been reckoned at £7,600,000. (*Cove on the Revenues of the Church of England, with an Inquiry into the Necessity, Justice and Policy of an Abolition or Commutation of Tithes* (3d edit., London, 1823); and *Remarks on the Consumption of Public Wealth by the Clergy of every Christian Nation*, etc. (London, 1823.) See, also, the article *Ecclesiastical Establishments.*) This income is divided among 2 archbishops, 25 bishops and 10,500 other clergymen; among whom are 5098 rectors and 3687 vicars. Many of the appointments in the church do not require the performance of actual service, but are held, as the French abbeys were formerly, as pensions and sinecures. The number of the churches amounts to 10,192; the number of the families belonging to the clergy, to 16—18,000. The clergy doing actual service are miserably paid. In 1814, there were 1657, among 4406, whose salaries did not amount to £60 each. All that is paid to the parish priests, of the £7,600,000 belonging to the Episcopal church, is about £500,000, or one fifteenth of the whole revenue; and they have been, therefore, chiefly supported by the voluntary contributions of their parishioners; so that the members of the richest church in the world are compelled to live upon the bounty of others. The good of the people, and of the lower clergy, would be greatly promoted by a dimi-

nution of the total amount of the church revenue, and a more equal division of the reduced amount. The tithes should be abolished. Then, if the smallest country parish had attached to it a salary of £250, a deanery one of £1000, a bishopric one of £3000, an archbishopric one of £8000, a little over £2,000,000 would be required; and thus £5,000,000 would be saved yearly. In Ireland, the case is still worse. In that country, there are 4 Protestant archbishops, 22 bishops, and a multitude of richly-endowed deaneries, rectories, &c. All these are merely sinecures; as, among 7,000,000 people, there are hardly 400,000 who belong to the church of England. Nevertheless, this body of ecclesiastics receive an income of £1,300,000, while they do nothing for church or state; and the people of this country, who live in great poverty, are obliged, besides paying the above amount, to maintain their own Catholic clergy, which they do with strict honor. This revenue of the useless Protestant clergy might afford the means of great improvements in the condition of the indigent Irish, if the aristocracy of the landed proprietors had not monopolized it. They consider these places as their own property; as provisions for their younger sons; and the bishops, archbishops and deans are almost all brothers and cousins of the nobility.

Though the distresses which we have spoken of, as existing in England subsequent to the restoration of a general peace in Europe, were somewhat diminished in consequence of the reduction of the rents by many of the large landed proprietors, and of other measures, yet, in Ireland, the wants and oppressions of a numerous and uneducated population gave rise, for a number of years, to continual scenes of violence. One county or another was always in insurrection; and bands of armed men, under various names (white boys, &c.), waged a continual war with the obnoxious proprietors, overseers of estates, justices of the peace, &c. The passage of the Catholic relief bill, in April, 1829, by which the civil disabilities of the Catholics are in a great measure removed, we hope, will at length afford permanent quiet to this afflicted country. Since Mr. Peel (now sir Robert) became secretary for the home department, in January, 1822, he has been laboring, with much success, to reform the criminal law of Great Britain. The number of crimes which have come under the cognizance of the courts, of late years, has varied very much with the general state of the country. In the year 1817, which was one of general suffering, the number of criminal prosecutions suddenly rose from 8000 to almost 14,000; the number of persons condemned to death, from 890 to 1302; of persons transported to New Holland, from 1054 to 1734. After the resumption of specie payments by the bank, the new act of navigation, the adoption of a system of economy, and an establishment suited to a time of peace, Mr. Peel, in June, 1823, was able to make the following statements to parliament, on the condition of the country. "In 1817, seven out of nine of the manufacturing class were unemployed; in 1823, none. In Sheffield, the poor rates, in 1820, amounted to £36,000; in 1823, to only £13,000. In 1817, there were 1600 houses empty; in 1823, none. In Birmingham, in 1817, of 84,000 inhabitants, 27,500 received aid from the poor fund; a third part of the workmen had no occupation; the remainder were only half employed; the poor rates amounted to almost £60,000: in 1823, all the workmen were employed; the poor rates amounted to only £20,000; the weekly pay of the weavers, which in 1800 amounted to 13 shillings, and in 1817 had sunk to 3 shillings 3 pence, had risen again to 10—16 shillings. The total exports of England amounted, in 1820, to £48,951,467; in 1822, to £53,464,122. The price of corn was, in January, 1822, 32 shillings per quarter, and in June, 62 shillings. With the exception of Ireland, disturbances had ceased." Great Britain was neutral during the French invasion of Spain, in 1823; allowed her subjects to aid the cause of Greece, and acknowledged the Greek insurgents' right of blockade. She concluded a treaty of trade and alliance with the new American republics, which she formally acknowledged in 1825. A bill for the removal of the Catholic disabilities was brought forward in this session, and passed the house of commons, but was lost in the house of lords; and the disorders in Ireland continued. Early in the autumn of this year, the king prohibited any of his subjects from taking part in the war between Greece and Turkey, from fitting out ships, or exporting munitions of war for the assistance of Greece. In 1825 and 1826, great commercial difficulties took place, in consequence of a mania for speculation in foreign loans, and in costly undertakings, conducted by joint stock companies, together with an overloading of foreign markets with British manufactures. Numerous bankruptcies took place, and credit experienced a great shock. The distress soon subsided in

London, but in the country its effects were longer felt, and fell upon persons less able to bear loss. Numerous private bankers, many with little or no capital, had engrossed the circulation of their respective districts, and bank after bank became insolvent, involving the laboring classes in their ruin. Thus the entire currency of the country was deranged. The misery was so general, as to call for the immediate aid of the government. Bullion happened to be lower than the mint price, and the officers of the mint were ordered to coin sovereigns with all possible despatch. They were coined at the rate of 100,000 a day, and for one week at the rate of 150,000, and sent off in every direction. Besides this, however, the bank of England was obliged to make temporary issues of one and two pound notes; and thus the progress of the evil was averted. Ministers availed themselves of this opportunity to mitigate the strictness of the corn laws, and to protect the manufacturers against the monopoly of the great landed proprietors. Great Britain reconciled Portugal with Brazil, and supported the cause of the constitution and regency of the former power, her ancient ally, by sending troops to her assistance, at the close of 1826, and prevented Spain from forcibly interfering in her affairs. Canning himself had previously been in Paris, to take measures with the French cabinet for the peace of the Peninsula; and the three great powers, Austria, Russia and Prussia, left to the British and French cabinets the conduct of this business. At the same time, England united with Russia (April 4, 1826), at St. Petersburg, to induce, and, if necessary, to compel, the Porte to discontinue hostilities against the Greeks. January 5, 1827, the duke of York died, in the 64th year of his age. February 17, lord Liverpool, the prime minister, was taken alarmingly ill. The bill for the emancipation of the Catholics was brought forward in March, and, on the 7th instant, was lost in the house of commons, the vote being 272 for and 276 against it. April 13, Mr. Canning was announced as first lord of the treasury and prime minister, upon which occasion the ultra-tory members of the cabinet seceded, a whig ministry was formed, and a bitter opposition commenced on the part of the tories. July 6, 1827, the plenipotentiaries of Russia and France, at London, subscribed, with lord Dudley, the treaty of London, for the settlement of the affairs of Greece. (q. v.) The battle of Navarino was probably hastened by the unauthorized publication of a part of the treaty, by which the three powers obliged themselves to use force, if necessary, to compel a cessation of hostilities in the Mediterranean. August 8, Mr. Canning died, after a violent and painful illness. Immediately after his death, lord Goderich was made chief lord of the treasury and prime minister. January 8, 1828, this minister retired from office, and his cabinet was dissolved. The duke of Wellington was now made prime minister. Early in this year, the corporation and test acts were abolished. (See *Corporation and Test Acts.*) In April, 1829, the Catholic relief bill was passed. (See *Catholic Emancipation.*) June 26, 1830, George IV died, and was succeeded by his brother, the duke of Clarence, under the title of William IV. In the fall of 1830, after the revolutionary movements on the continent of Europe, much excitement occurred in England. The ministry became unpopular, and, on a debate (November 15) in the house of commons, respecting the civil list, the majority against the ministry was 29. The duke of Wellington announced, the next day, that he had resigned his office; and, in a day or two, a new ministry was formed, at the head of which was earl Grey. Mr. Brougham was appointed lord chancellor; lord Goderich, secretary of the colonial department; the marquis of Anglesea, lord lieutenant of Ireland; lord Hill, commander in chief; lord Althorp, chancellor of the exchequer; the marquis of Lansdowne, president of the council, &c., &c.—For information respecting British commerce, the soul of British politics, see the articles *Commerce of the World*, *East India Company*, *India*, *Bank*, &c. For the internal navigation of England, see *Canals*. For further information, see the articles *England*, *Scotland*, *Ireland*, *Chatham*, *Burke*, *Fox*, *Pitt*, *Canning*, *Wellington*, *Londonderry*, &c., the different English sovereigns, &c., *National Debt*, and others; likewise the History of Hume and Smollett, continued by William Jones, in his History of England during the Reign of George III (London, 1825, 3vols.). This work of Jones is not sufficiently impartial. The History of England, from the first Invasion by the Romans to the Accession of Mary, by the Catholic clergyman doctor Lingard (2d edit., 6 vols. 4to. London, 1825), and the continuation to George III (in all 8 vols. 4to.), is of authority, and well written; but with regard to church history, the views are partial and limited. Sharon Turner's works show much investigation and impartiality. They are, 1. his History of the Anglo-Saxons, from their

first Appearance on the Elbe, and their Invasion of England, to the Norman Conquest (4th edit. 3 vols., London, 1824); 2. his History of England during the Middle Ages, from William the Conqueror to Henry VIII (2d edit., 6 vols., London, 1825, et seq.); 3. his History of the Reigns of Edward VI, Mary and Elizabeth. Sir James Mackintosh's History of England (1st vol. London, 1830, reprinted Philadelphia, 1830); also Hallam's Constitutional History of England; Guizot's *Collection des Mémoires relatifs à la Révolution d'Angleterre* (Paris, 1823). Lord John Russel's History of the English Government and Constitution from the Reign of Henry VIII to the latest Time. George Moore's History of the British Revolution of 1688, &c. For statistical and political information, see the *Lettres sur l'Angleterre*, by the baron de Staël Holstein (Paris, 1825). The *Lettres de Saint James* (Geneva, 1819—26, 5 vols.), also deserve attention, as do the *Voyages dans la Grande-Bretagne, relativement aux Services publics de la Guerre, de la Marine, et des Ponts et Chaussées, au Commerce et à l'Industrie, depuis* 1816, by baron Ch. Dupin (1st ed. 1820, 2d ed. Paris, 1825, 3 parts, each of 2 vols.) Lowe's work on the condition of agriculture, commerce and finance in England (1823) deserves to be mentioned.

I. *The Civil State.* The English nation may be considered as divided into three classes, the *nobility, gentry* and *commonalty.* The clergy do not form a separate estate, as in most countries of Europe. The laws, however, acknowledge only two distinctions, the nobility and the commonalty, the latter including the gentry. The distinction between the nobility and commonalty is by no means like that between the patricians and plebeians in ancient Rome, nor that between the nobles and citizens of France in the last century. Intermarriages, it is well known, are usual: the eldest son only inherits the rank and titles of the ancestor; the way to the highest dignities is always open to talent and merit, and the privileges of nobility are not of a kind to wound the self-respect of a commoner. The gentry is not, like the lower nobility in many countries, separated by political privileges from the commonalty, but sits with it in the house of commons, where wealth, industry, talent and knowledge are the great moving powers. Nor have the high ecclesiastical dignities (as in some cases in Germany), nor the great offices of state, been connected with birth. Two queens have reigned in England (Mary and Anne), whose mother, Ann Hyde (wife of James II), was the daughter of an English lawyer (lord Clarendon). The English gentry enjoy no exemption from taxes or other civil burdens; the peers, indeed, are exempted from the performance of many little public services, such as sitting on juries, &c. They have also a right to be tried by the house of lords on indictments for treason, or felony, or misprision thereof; but the administration of justice before this tribunal is as strict as in the ordinary courts. Their persons cannot be arrested in civil cases. The civil state of the English nation has acquired its present organization, like the other institutions of the country, by a gradual developement, and modifications suited to the spirit of the age, but retarded by the attachment of the nation to old customs. The nobility still bears traces of the Saxon times, although the Saxons cannot strictly be said to have had a hereditary nobility, in the modern sense of the word. Their *athelings* were only the members of the royal family, and probably only the sons and grandsons of the king. The archbishop of England, by virtue of his spiritual dignity, and not, as some have stated, in the character of landed proprietor, was equal to them in rank and privileges, and had the same *weregild.* The country was divided into shires, afterwards called *counties,* each of which was governed by an *ealdorman;* but this dignity was not hereditary. (See *Alderman.*) Among the freemen, the royal officers and thanes enjoyed particular privileges; but their dignity was not hereditary, and the *ceorls,* or husbandmen, attained the same rank, when they owned five hides of land, together with a chapel, a kitchen, a hall and a bell. A merchant, who had made three voyages on his own account received the title of *thane.* The free peasants (according to their various relations to the soil, called *ceorls, cotsets, bovarii, bowers, bure*), the serfs or bondsmen, employed partly in personal services, and partly in the cultivation of the ground (in Saxon *theowmen esne,* in Danish *thraels*), made up the rest of the people. The lines of distinction between these different classes were not very broad, and it was not difficult for a serf to become a freeman, a freeman a thane, and a thane an ealdorman. Towards the end of the Saxon period, there was a tendency to render all these distinctions hereditary, which was completed and fixed by the Norman conquest. The dignity of governor of a county became hereditary and feudal, but in the course of a century, had ceased to be any thing more than titular. In the reign of

king John, the earls, the descendants of the former governors, were merely the first class of barons, generally, indeed, with great landed estates, but without any official character. This had devolved on the sheriffs (*shire-gerefan*, *vice-comites*, *exactores*, reeves of the shire), who have continued to the present time. The whole property of the soil was vested in the king, as the lord paramount, after the conquest, and every thing became hereditary; even the bishops and mitred abbots became barons. The holders of fiefs, obliged to render military service for their lands, constituted the knighthood; the nobility, consisting of the two classes of earls and barons, had a seat in parliament, where the knights appeared only by deputies. That amidst these changes many free husbandmen should be converted into villeins, is not astonishing; yet the commons, particularly the city of London, had become so powerful, and the freeholders so numerous, that the tendency to liberty in the nation was decided. The risings of the people against the oppressions of the barons in the reign of Richard II (1381), when the abolition of slavery and its consequent grievances was demanded, showed to what the nation was tending, and before two hundred years afterwards, every trace of villenage had disappeared. The landed proprietors, of all classes, participated, as freeholders, in the choice of members of parliament; the tenants only, who had no property in the soil, and the copyholders, who were originally tenants at will, and afterwards acquired a certain limited property in the soil, were not admitted to this privilege. To the two ranks of nobility above-mentioned, three others were afterwards added. Edward III, in the brilliant period of his conquests, created his eldest son duke of Cornwall (1337), and established for his younger sons the ducal dignities of Clarence and Lancaster (1362). Richard II not only created his uncles dukes of York and Gloucester, but bestowed on his favorite, Robert de Vere, the title of *duke of Ireland*. Since that time, the ducal title has remained the highest title of nobility. The duke of Lancaster was the only one who really possessed a duchy, the county of Lancaster having been bestowed on John of Gaunt, Edward's fourth son, with the royalties thereto belonging. Although the duchy was reunited to the crown in 1461, this county is still a county palatine. After this period, the ducal title was held by many families; but in the wars of York and Lancaster, and by the numerous condemnations for high treason, most of them became extinct. There are now only two dukes, whose titles date from a period antecedent to the reign of Charles II—the duke of Norfolk (from 1483), and the duke of Somerset (from 1546). Charles II bestowed the title on his natural sons. Since the accession of George III, it has been bestowed only on the royal princes, the duke of Wellington and the duke of Buckingham. The latter are the only persons who have received this honor since 1766. There are at present 18 English dukes, 8 Scottish (of whom two are also English dukes) and 1 Irish. The title of marquis was introduced in the time of Richard II. It is the next in rank to the ducal dignity. In 1789, there was only one marquis in England; there are now 18, 3 in Scotland, 14 in Ireland. Next in degree are the earls (q. v.), the oldest of all these titles. The title of viscount was introduced during the reign of Henry VI. The present number of earls is 99 in England, 44 in Scotland, 74 in Ireland; of viscounts, 19 in England, 4 in Scotland, 42 in Ireland. The barons in England are 111, in Scotland 22, in Ireland 58. These numbers designate individuals, not titles. The number of titles is much more numerous, most of the higher nobility having several. They are classed here according to the titles by which they are generally known. (There are, besides, official barons, as barons of the exchequer, barons of the cinque ports, &c., who are not peers, have no seat in the upper house, and whose title is not hereditary.) Each individual of the higher nobility is called *lord*, and is a peer of the realm. The title of *lord* is also attached to the dignity of mayor of London, but only during the term of office. The archbishops and bishops of the church of England, have also the privileges of the higher nobility, of which the chief is a seat in the house of peers; but this dignity is only in virtue of their ecclesiastical offices. The Scotch and Irish peers sit in the house only by deputation; the former electing 16 and the latter 28 of their number for this purpose. The titles of nobility mentioned above, are inherited by the eldest son, who, during the life of the father, bears by courtesy his second title; if the father has none (as in the case of a baron), the son is styled *lord*. The other privileges of the higher nobility are inconsiderable. In 1813, they amounted to 564 families (including the 6 archbishops and the 42 bishops), and the total revenue of the temporal nobility was

reckoned by Colquhoun at £5,000,000; that of the spiritual lords, at £240,000.

The gentry may be said to include the rich but untitled landed proprietors, and, in general, all to whom wealth, office or talents, united with good manners, secure respect. The title of *esquire* (*ecuyer, scutifer, armiger*) belongs to all civil officers, from the justice of peace upwards, to doctors and barristers. The eldest sons of knights, and the younger sons of peers, inherit it. All foreign nobles, even the Irish peers, are only reckoned among the esquires in England. The next degree is that of knights (q. v.), among which are the baronets (q. v.): this dignity was created by James I, in 1611, and descends to the eldest son. In order to raise money, he granted to 100 persons the right of bearing the arms of Ulster, and prefixing the title *sir* to their names, in consideration of the payment of £1000 each. There are no privileges annexed to the baronetcy, but the title is considered as an honor, and is frequently bestowed on distinguished civil and military officers, and on scientific and literary men of eminence. The number is now 851. Colquhoun estimated the whole number of knights and esquires at 11,000, that of gentlemen who live on their incomes at 35,000. The difference between this lower nobility and the commonalty is so slight, that Blackstone includes them under the same head. The commonalty, taken in its narrowest sense, is composed of yeomen (all freeholders of forty shillings a year income) and tradesmen, artificers and laborers. The contrast between want and affluence is nowhere so striking as in England. Three sevenths of the population have merely enough to supply their necessities. One third is assisted by the parishes. In the reign of Charles II, all military tenures were changed into free and common socage; and all feudal dues and services, with the exception of *frankalmoigne*, and the honorary services of grand serjeanty, were abolished. But even the villeins, from whom the modern copyholders have sprung, were treated as freemen, except in regard to the obligation to render certain services. This appears from the three kinds of courts formerly held in the manors, and which by law may still be held there. The court baron at common law—baron's court, or freeholder's court—was composed of the freeholders, who determined civil controversies arising within the manor. The customary court appertained entirely to the copyholders, and the lord or his steward was the judge. These courts were held every three or four weeks, originally in the lord's hall. In cases of criminal jurisdiction, all persons commorant within the precinct, freeholders and copyholders, were required to attend the court-leet (in Anglo-Saxon, *folk-right*), which was held, in the name of the king, under the presidency of the lord's steward. Charges of treason or felony he referred to the king's court. Offences of a lighter character were tried by a jury whom he appointed, and conformably to whose verdict he gave judgment.

II. *English Constitution.* We cannot agree with the often repeated assertion of Montesquieu, that the English constitution owes its energy to the strict separation of the three powers—the executive, the judicial and the legislative. For parliament exercises an important part of the judicial and executive powers; the latter chiefly in the house of commons, which keeps up a perpetual oversight on the administration, and performs a great many executive acts by private bills (for the constructing of roads, bridges, canals, &c., granting divorces, &c.); the former by the house of lords, which is the supreme judicial tribunal of the empire: the king, in the privy council or in his cabinet, exercises legislative and judicial powers: the three superior courts have a power similar to that of the Roman pretors, as their decisions have, in a degree, the force of laws: and, in general, the three departments run into each other, so that neither of them has an entirely separate and independent organ. Not less erroneous is the representation of the king and the two houses of parliament as a mixture of aristocracy, monarchy and democracy. The parliament is thoroughly aristocratic, with the occasional exception of a few members, whom particular circumstances connect with the cause of the people. The lower house is, on the whole, merely an assembly of the great landholders, and the upper house is the same in another form, and with the addition of the aristocratical element of birth. But the rights of the people, and the sovereignty of the laws, on which civil freedom depends, are secured by other institutions, the permanence of which is guarantied by two circumstances; first, that the aristocracy depends on these institutions as a protection against the encroachments of the royal power; and, secondly, the danger that an attempt to abolish them (we speak of the trial by jury, the liberty of the press, &c.), would lead to popular encroachments on the privileges of the aristocracy. The

royal power still bears the traces of the old German constitutions. From leaders of a free military community, the kings have become feudal superiors of the country, lawgivers (the royal sanction being necessary to the passage of a law) and judges (the superior judges in Westminster were for a long time removable at the royal pleasure, and, by a legal fiction, the king is always considered to be present); but the royal power has been restricted by a great number of express acts and usages. The powers of parliament are limited only by natural impossibilities, and have often sufficed to overthrow the royal prerogatives. Yet it can do nothing against a decided public opinion; so that it is very justly said, that there are three things in the English constitution whose nature and extent cannot be accurately defined—the privileges of parliament, the prerogatives of the crown, and the liberties of the people. The Anglo-Saxon constitution, as modified (though but little changed in its essential features) by the Norman conquest (1066), is the basis of the English constitution. The general adoption of the feudal system, a greater extension of the seigneurial rights, and the introduction of the usages of the Norman court, with which was connected the establishment of the superior judicial and administrative offices, were the principal changes. But the most important features of the Anglo-Saxon institutions—the legislative power of the nation exercised in the *wittenagemote* (assembly of wise men, i. e., bishops and nobles) and the *mickelgemote* (great assembly), or general assembly of the nation, and the judicial power of the nation exercised in the court-baron and court-leet over the inhabitants of a manor, in the county court and the sheriffs-tourn, or criminal tribunal of the county, in the assizes and the jury, and finally in the house of lords over the peers—are preserved, and the extravagant extension of feudal rights was gradually curtailed by royal charters to the time of Henry III.*

A. *The King.* (See Chitty's *Treatise on the Prerogatives of the Crown, and the relative Duties and Rights of the Subject.*) The fundamental maxim, upon which the right of succession to the throne depends, is, that the crown is, by common law and constitutional custom, hereditary, but in a peculiar manner, and that the right of inheritance may from time to time be changed or limited by parliament; under which limitations the crown still continues hereditary. It descends to the males in preference to the females, strictly adhering to the rule of primogeniture. On failure of lineal descendants, it goes to the next collateral relations of the deceased king, without distinction of whole or half blood, provided they are lineally descended from the royal stock that originally acquired the crown. The order of descent in the latter case is strictly lineal, so that the female descendants of an elder line have the preference to the male descendants of a younger line; but among brothers and sisters, the males have always the preference. The crown vests immediately in the successor, on the death of the reigning king, without any formal act of taking possession. There is, therefore, no interregnum; hence the maxim, the king never dies. The statutes passed in the first year after the restoration of Charles II, are called the acts of the 12th year of his reign, dated from the death of Charles I. The king is of age at 18 years: the regency, during the minority, is either settled by the late king's will, or by act of parliament. The heir to the crown has, since the time of Edward III, inherited the title of *duke of Cornwall*, and receives that of *prince of Wales* by letters patent. The coronation takes place in Westminster-abbey; the archbishop of Canterbury has the right of crowning the king, the archbishop of York the right of crowning the queen. For the support of the royal dignity, &c., the civil list (q. v.) is granted by parliament. The great offices of state, with the exception of two, which are hereditary, are held at the pleasure of the king. The officers who hold them are, 1. the lord high chancellor, who is also keeper of the great seal; 2. the lord high treasurer, or president of the treasury (since the time of George I, this office has been administered by five commissioners, called *lords of the treasury;* the first lord of the treasury is the prime minister); 3. the lord president of the privy council; 4. the lord privy seal, who affixes the privy seal to royal grants and documents, &c., before they pass the great seal, in case the latter is affixed; 5. lord high chamberlain; 6. lord earl marshal, also chief judge of the court of chivalry (this office is hereditary in the

* The chief documents of the British constitution are, 1. The old Charter of Henry I (*Charta libertatum*); 2. Magna Charta (q. v.); 3. the Petition of Rights (q. v.); 4. the Habeas Corpus Bill (q. v.); 5. the Declaration of Rights to which William III was obliged to accede as the condition of his ascending the throne; 6. the Acts of Succession of 1701 and 1705; 7. the Act of Union with Scotland, 1707; 8. that with Ireland, 1801.

dukes of Norfolk, who, being Catholics, have exercised it by deputy); 7. the lord high admiral, or chief judge of all cases arising upon the sea. This office is also administered by commissioners, whose president is styled *first lord of the admiralty*. In Scotland, since the union, there have been five great offices of state and of the crown. The king, with his predecessors and successors, constitutes a body politic or sole corporation. The power of changing the succession to the throne has been exercised by parliament on various occasions, as in the wars of York and Lancaster, and more particularly in 1688, when it declared king James II, and his successors forever, to have forfeited the crown, and by the act of settlement (1700), when it restricted the succession to the Protestant descendants of the princess Sophia, youngest daughter of the princess palatine Elizabeth (daughter of James I). The power of the king is limited by the laws, and is constitutionally derived from a fundamental compact between him and the nation. The divine right, so obstinately maintained by the Stuarts, was never recognised by the nation, and William III, Mary and Anne ascended the throne, according to express declarations, only by virtue of a transmission of the crown to them by the nation. But the maxim has been acknowledged, particularly since the restoration, that there is no power in the state superior to the royal prerogatives: the acts of the king are therefore subject to no examination, and the king is not personally responsible to any tribunal: hence the maxim, The king can do no wrong. Yet there is sufficient provision for confining the exercise of the royal power within the legal limits. 1. All royal acts are construed in accordance with the laws, and it is taken for granted that the king can never intend any thing contrary to law. 2. The counsellors of the king are responsible for the royal acts, and, as well as all those who are concerned in the execution of them, are liable to impeachment and examination, without the right of defending themselves by pleading the royal commands. This system of responsibilities is the main pillar of the English constitution, and no where is respect for the person of the monarch so admirably united with the security of the subject, as in England. In this way, royal orders which are in violation of the law, are set aside either by a recurrence to express limitations, or on the ground that the sovereign was deceived. 3. The parliament and the judicial tribunals have also the right to discuss freely such royal acts, and in particular parliament, and each individual member of the upper house, has the right to make remonstrances to the crown. Every peer of the realm is by birth a counsellor of the crown, and as such has a right to demand a private audience, for the purpose of expressing his opinion on subjects of national concern. For the case of an attempt on the part of the crown to subvert the constitution, the English law can make no provision, since the maxim that the king cannot even think any wrong, bars the possibility of such a supposition. An open and direct attack on the constitution, implies in itself an abdication of the crown; but as to what particular act constitutes such an attack, no precedent exists. "If any future prince," says the loyal Blackstone, "should endeavor to subvert the constitution by breaking the original contract between king and people, should violate the fundamental laws, and withdraw himself out of the kingdom, such a conjunction of circumstances would amount to an abdication, and the throne would thereby be vacant. But it is not for us to say, that any one or two of these ingredients would amount to such a situation, for there our precedent would fail us. In these circumstances, therefore, since both law and history are silent, it becomes us to be silent too, leaving to future generations the exertion of those inherent (though latent) powers of society, which no climate, no time, no constitution, no contract, can ever destroy or diminish." 4. Individuals are protected from any abuses of the royal power by the habeas corpus act (q. v.), the liability of the agents to prosecution, the right of complaining to parliament, and the liberty of the press.

B. *The Parliament* is defined to be the legislative branch of the supreme power of Great Britain (although it has been shown above to exercise both executive and judicial functions), consisting of the king, the lords spiritual and temporal, and the knights, citizens and burgesses, representatives of the commons of the realm. The term is, however, often confined to the two houses, and it is in this sense that we shall use it. We have already spoken of the general assembly, or great council of the realm, of the Saxon period. The origin of the English parliament has been traced to these Saxon assemblies; but it cannot be denied, that it acquired a new form in the Norman times, when the sovereign summoned the chief of his imme-

diate vassals, three times a year, at Christmas, Easter and Whitsuntide, to consult about the public affairs of the kingdom. In the reign of Henry III, Simon de Montfort, earl of Leicester, assembled a parliament, fixed on a more popular basis than any which had been previously summoned. Besides the barons of his own party, and several ecclesiastics who were not immediate tenants of the crown, he ordered returns to be made of two knights from each shire, and of deputies from the boroughs. This period (1265) is commonly esteemed the epoch of the house of commons in England; and if, as some think, this was rather a revival of an old custom, than an innovation, it is certain that it was continued by Henry III, after his liberation and restoration to power by the battle of Evesham. These estates often sat together; but, in difficult cases, each estate, the prelates, barons, and knights of the shire with the burgesses, sat by itself; but even in this case, they gave their answer in common. In the reign of Edward III (1327—77), the separation of the three estates into two houses, the house of lords, consisting of the lords spiritual and the lords temporal, and the house of commons, consisting of the knights, citizens and burgesses, became settled. The lords spiritual, the archbishops and bishops, are supposed to hold certain ancient baronies under the king, William I, the Conqueror, having changed the spiritual tenure of *frankalmoigne* into the feudal or Norman tenure by barony, which subjected their estates to all the feudal charges, from which they were before exempt. Previous to the dissolution of the monasteries by Henry VIII, there were also 26 mitred abbots and 2 priors, which made the whole number 54, the number of lords temporal being, at that time, but 106. The lords temporal consist of all the peers of the realm; some of them sit by descent, as do all ancient peers; some by creation, as do all new made ones; and others, since the union of Scotland and Ireland, by election. All the peers were not originally entitled to a seat as a matter of right, but only those who were expressly summoned by the king. The number is indefinite, and may be increased at the pleasure of the crown, which, however, cannot deprive a peer of the dignity once bestowed. In the reign of queen Anne, 12 new peers having been created at once, a bill was introduced, and passed the house of lords, in the reign of George I, for restricting this prerogative of the crown; but the bill was thrown out in the house of commons, whose leading members are naturally desirous of keeping open the avenues to the peerage. No king has made such frequent use of this prerogative as George III. From 1760 to 1820, were created 2 dukes, 16 marquises, 47 earls, 17 viscounts and 106 barons, in England alone, without reckoning the Scotch and Irish titles. The whole number of English peers, at the end of his reign (February, 1820), was 291. By the act of union with Scotland, 16 representatives of the Scottish peerage are elected by the Scotch nobility, for life; and 28 are elected, in the same manner, by the peers of Ireland; so that the whole number of lords temporal was 335. On the union with Ireland, 4 lords spiritual were also added from the clergy of that country (the 4 archbishops and 18 bishops of Ireland sit by rotation). The whole number of the house of lords was, therefore, inclusive of the 2 English archbishops and 22 bishops, at that time, 363. It is at present, 401. The house of commons consists of 658 members, 513 for England and Wales, 45 for Scotland, and 100 for Ireland. The distribution of these members is proportioned neither to population nor property. (See *Elections.*) In the first place, the counties are of unequal extent; York has over 1,000,000 of inhabitants, and Rutland only 18,000; yet every county sends 2 knights, elected by the freeholders. Each of the 12 counties of Wales, and of the 33 counties of Scotland, sends 1, except that the 6 smallest Scottish counties send but 3, in the following way: Caithness and Bute, 1; Clackmannan and Ross, 1; Nairn and Cromarty, 1. The 32 counties of Ireland send each 2 members. Every freeholder, having a freehold of the clear annual value of 40 shillings, is entitled to vote for the knights. In Ireland, the 40 shilling freeholders were disfranchised, in 1829 (10 George IV, c. 8), and a freehold of the clear yearly value of £10 sterling required to give the right of voting. The number of electors is very different in different counties: in York, there are 16,000. In some counties, the landed property of single families is so great, that they return one or both the members. In Scotland, the case is still worse, as only the immediate vassals of the crown have the right of voting; and their number is very small. In no county is it greater than 220; in most of them it is less than 100; and in Clackmannan it is but 16; in Nairn, 20; in Peebles, 34; in Sutherland, 35. The 30 *commissioners*

(as they are called) from Scotland are elected by 2767 proprietors. In Ireland, it has been found necessary to admit the mere tenants for life to vote, on account of the small number of proprietors. Of the 92 knights of the shire, for the 40 English and 12 Welsh counties, 46 are returned by single great proprietors, principally nobles; yet these are considered the most independent members of the house. The citizens and burgesses are considered, in theory, to represent the mercantile or trading interest of the kingdom. But the distribution of these members is still more unequal than that of the knights. It was originally left at the pleasure of the crown to summon the most flourishing towns to send representatives; but deserted boroughs continued, in most cases, to be summoned, and even Blackstone ventures to hint, on this subject, that "if any alteration might be wished or suggested in the present frame of parliaments, it should be in favor of a more complete representation of the people." The number of citizens and burgesses is at present 405 for England, 12 for Wales, 15 for Scotland, and 35 for Ireland. The privilege of sending each 2 members was conferred on the English universities by James I. By the exemption of some boroughs, and the creation of new ones (which prerogative was first exercised by Edward IV, and for the last time by Charles II), the number of burgesses has varied at different times. In the first parliament of Henry VIII, the whole number of the house of commons was 298: 360 have since been added by statute or by the king's charter creating new or reviving old boroughs. These are, by statute, the 24 burgesses and knights for Wales, 2 for the county and 2 for the city of Durham, 2 for the county and 2 for the city of Chester; 45 for Scotland, and 100 for Ireland, by the acts of union with those kingdoms; and the remainder by charter. The house of commons, therefore, is now constituted as follows:—

In the first parliament of Henry VIII,	298
Created since, by statute,	168
Created or restored, by charter,	192
	658

The number of places which send members, and the number of knights, citizens, burgesses and barons sent by the several cities, counties, boroughs and places, are as follows:—

117 Counties,	England,	40	2 each	80	Knights (called, also, in Scotland, *commissioners*) of the shires,	186
	Ireland,	32		64		
	Scotland,	27	1 each	27		
		6	3 alternately, 1 each	3		
	Wales,	12	1 each	12		
32 Cities,	England,	23	2 each	46	Citizens,	60
		1		4		
	Ireland,	2	2 each	4		
		5	1 each	5		
	Scotland,	1		1		
222 Boroughs,	England	165	2 each	330	Burgesses,	396
		1		4		
		5	1 each	5		
	Ireland,	26	1 each	26		
	Scotland,		14 districts, 1 each	14		
	Wales,	10	1 each	10		
		1		2		
3 Universities,	England,	2	2 each	4		
	Ireland,	1		1		
8 Cinque Ports,	England,		2 each	16	Barons,	16
382 Places			choose		Members,	658

In England, London is the city sending 4, Weymouth and Melcombe-Regis is the borough sending 4. In Scotland, Edinburgh is the city sending 1. In Ireland, Dublin and Cork are the cities sending 2. Oxford, Cambridge and Dublin are the universities. Many of the boroughs (q. v.) are entirely gone to decay. These are called *rotten boroughs*, and the right of election appertains to a few houses (as, for example, Old Sarum consists merely of the ruins of a castle, and the election of 2 members of parliament belongs to seven holders of certain pieces

of land, and depends on the earl of Caledon), or is entirely in the hands of a single family. In several large towns, the right of suffrage belongs only to the freeholders, or to certain burgage tenures, so that the number of electors is very small. Plymouth, with 61,212 inhabitants, has but 230 voters; Harwich (4010 inh.), 32; Portsmouth (42,054 inh.), 100; Bath (36,811 inh.), 18; Bristol (87,779 inh.), 50, &c. These voters are mostly under the influence of some great family; and, in this way, about 12 families alone command more than 100 seats in parliament. Thus the earls of Mount Edgecombe and Fitzwilliam, and the dukes of Bedford and Devonshire, return each 6 members; the Pelhams (dukes of Newcastle, earls of Chichester and lords Yarborough), 15; the duke of Norfolk, 10; the earl of Lonsdale, 10, &c. For the few places that are in the hands of independent voters, a shameless system of bribery exists, in spite of the prohibitory laws, and the prices of votes are generally well known: a seat for a small place costs about £5000. On the other hand, the principal cities, Manchester (pop., 133,000), Birmingham (pop., 118,000), Leeds (pop., 100,000), and a great number of places with from 10,000 to 40,000 inhabitants, have no representation; and the cure of this evil is the great object of the friends of parliamentary reform. In its actual composition, therefore, the house of commons is but too easily influenced by the administration, which has thus been sometimes enabled to sustain, for a long time, a policy opposed to the national opinion and the general welfare. But it is not difficult to conceive of the obstacles which interest and ambition throw in the way of reform. It is no longer the influence of the crown, but of the aristocracy, whose authority would be diminished by a real national representation, that prevents the adoption of measures of reform. The parliament is not permanent (the only protection against its complete corruption), but it is the royal prerogative to summon and dissolve it. It is regularly summoned by the king's writ or letter, issued out of chancery, addressed to each peer individually, and to the sheriff of each county, for choosing the members of the county and of the cities and boroughs in the same. The sessions are held in the old royal palace in Westminster, where each house has its chamber. The first session is attended by the king, who sits in person in the upper house, and, by himself or the lord chancellor, shows the reason of their meeting; the speech from the throne is answered by an address from each house. After taking the oath of supremacy and the oath of allegiance, the commons choose a speaker and a committee of five persons (on the privileges of the house, petitions, contested elections, commerce, and the church); they then proceed to any other business that may come before them. In the upper house, the lord chancellor presides; the lords have the right of voting by proxy. Each house manages its own concerns, and any matter may be proposed in either house, except that all grants of subsidies or parliamentary aids begin in the house of commons, and the lords have not even the right of making an amendment to a money bill; they can only reject or accept it. (For the mode of making laws in parliament, see *Statute.*) As the parliament is summoned, so it is prorogued, by the royal authority, expressed either by the lord chancellor in his majesty's presence, or by commission from the crown, or by proclamation. Both houses are prorogued at the same time. A dissolution of the parliament is effected either by the authority of the crown, or by the demise of the crown, or by length of time. The house of commons being chosen but for seven years, at the expiration of that time, parliament is dissolved *ipso facto.* So it determines within six months of the death of the king, if not previously dissolved by his successor. It has already been mentioned, that parliament takes an important part in the executive and judicial administration; the lower house, having the entire disposal of all grants of money, has the direction of all financial concerns; and there is no subject which may not be brought before it by petition, complaint, or motion of a member. The upper house is the supreme court of judicature in the nation. To this authority it succeeded on the dissolution of the *aula regia.* The barons of parliament were members of that court, and, the rest of its jurisdiction being dealt out to other tribunals, the right of receiving appeals, and superintending all other jurisdictions, still remained in the residue of that assembly, from which every other court was derived. In civil cases, it is the supreme court of appeal from the superior tribunals of England, Ireland and Scotland. Appeals and writs of error from the superior courts of the foreign dominions (the isles of Man, Jersey, Guernsey and the colonies), are carried up to the king in his privy council. In indictments for treason or felony, or misprision thereof, where the

accused is a peer of the realm, the house of lords are the judges of the law and the fact; or if the trial is in the court of the lord high steward, the peers-triers are only judges of the fact. The dignity of lord high steward was formerly hereditary, but he is now appointed merely for the particular case. In cases of impeachment by the house of commons, the house of lords are also the judges. All the forms of a criminal trial are then observed, and the verdict must be by a majority of at least 12 votes. The marquis of Hastings, governor-general of India, was tried by this tribunal, on an impeachment of extortion and cruelty; Dundas (viscount Melville), secretary of war, as guilty of high crimes and misdemeanors, in the office of treasurer of the navy; and the duke of York, as generalissimo, for the imputed sale of commissions. Still different from this judicial capacity of the house of lords, is the right of passing a bill of attainder, the consequences of which are forfeiture of property and corruption of blood, or a bill of pains and penalties, which is of a less severe character. This right can be exercised in either house (in the case of the late queen of England, the bill was passed in the upper house). Before it can take effect, however, the bill must pass through both houses, and receive the king's assent. (For an account of the judiciary system of England, see *Courts*, *Equity*, *Assize*, *Jury*, *Common Law*, *Criminal Law*, &c. See, also, Blackstone's *Commentaries*.)

C. *The Rights of the People of England.* The absolute rights of every Englishman are, by English writers, reduced to three principal heads—the right of personal security, the right of personal liberty, and the right of private property. No man shall be interrupted in the legal enjoyment of his life, his body, his health, his reputation, nor limited in his personal freedom, without due course of law; nor be deprived of the free use and disposal of his acquisitions, save by the laws of the land. These rights have been asserted and confirmed, from time to time, by a series of acts beginning with the Magna Charta and ending with the Bill of Rights (*see above*), which are not to be considered as the origin of these rights, but merely as the acknowledgment of their existence. Among the principal securities of the English freedom are, 1. the established principle that no man's liberty can be restrained by the government further than the law allows; 2. the many offices of consequence in the civil administration, which are exercised by the people themselves, such as those of the justices of the peace, the jury, the grand jury, the offices in the municipal administration, and, above all, the right of assembling, at pleasure, for the purpose of discussion. The personal responsibility of public officers, and the celebrated *habeas corpus* act, are great securities against arbitrary encroachment. But the chief protection is the liberty of the press.

III. *The Administration of the Government* also bears many traces of its Saxon origin. It differs from that of other monarchical governments of Europe in two important points; first, that a great part of the powers which, in other countries, centre in the crown, in England remain in the hands of the nation; and, secondly, that the disposition of the executive officers to encroach on the rights of the people, is checked by the constitutional responsibility of each officer. The king is the supreme head of the state in peace and war, the lord paramount of the soil, the fountain of justice and honor, and the supreme head of the church. As a constituent part of the supreme legislative power, he has the prerogative of rejecting such bills in parliament as he judges improper to be passed. This prerogative, however, has never been exercised since the year 1692. As the generalissimo, or the first in military command within the kingdom, he has the sole power of raising and regulating fleets and armies, which, however, is virtually controlled by the necessity he is under of obtaining supplies from parliament. As the fountain of justice and general conservator of the peace of the kingdom, he alone has the right of erecting courts of judicature, and all jurisdictions of courts are derived from the crown. As the fountain of honor, of office and of privilege, he has the power of conferring dignities, disposing of offices, and conferring privileges on private persons. In the foreign relations of the nation, he is considered the nation's representative, and therefore has the sole power of sending and receiving ambassadors, making treaties and alliances, declaring war and making peace. The council of the king is distinguished into the privy council and the cabinet council. The latter consists of those ministers of state more immediately in the confidence of the king, who are summoned to consult upon executive matters; their number and selection depend only upon the king's pleasure. It is generally composed of the lord chancellor, the first lord of the treasury, the four principal secretaries of

state, the chancellor of the exchequer, the first lord of the admiralty, &c. (14 or 15 members); the remaining members of the ministry not belonging to the cabinet. The privy council, the number of which is indefinite (at present about 150), is constituted by the king's nomination, and generally consists of the princes of the blood, the ministers, &c. The dissolution of the privy council depends on the king's pleasure, and formerly took place, *ipso facto*, by the king's death. But, to prevent the inconvenience of having no council on the accession of a new prince, it was enacted, in 1708, that it shall continue for six months after the demise of the crown, unless otherwise determined by the successor. The privy council exercises original jurisdiction in some cases, as in questions between two colonies as to the extent of their charters, &c., and has an appellate jurisdiction over all the dominions of the empire, except Great Britain and Ireland. (See *Orders in Council.*) The subordinate administration is based on the old Saxon usages. The counties (see *Counties*, and *England*) are divided into hundreds, and tithings or towns. (See *Sheriff*, *Coroner*, *Justice of the Peace*, *Constable*, *Jury*, *Chancellor*.)

Great Circle Sailing; the manner of conducting a ship in, or rather pretty near, the arch of a great circle, that passes through the zenith of the two places, viz. from whence she came, and to which she is bound.

Great Kenawha River. (See *Kenawha.*)

Grebe (*podiceps*, Temm.). These birds are distinguished by the following generic characters; bill strong, slender and sharp-pointed; tongue slightly emarginated at tip; head small, oblong; body boat-shaped; back elevated; wings short and narrow; tail wanting, its place being supplied by a small tuft of short downy feathers; toes furnished on each side with a broad, plain membrane. These birds are exclusively aquatic. They live, sleep and breed on the water, frequenting both fresh water lakes and the sea. They are exceedingly active, swimming, diving and cutting the water with great agility. They can descend to great depths in search of fish, and hence are often caught in fishermen's nets. As the legs are placed far back, they can only stand in an erect posture, in which they can neither run nor take flight. When, therefore, an unfortunate bird happens to be driven on shore by a storm, it remains struggling with its legs and wings for a length of time. They breed in submerged marshes, fixing their nests to reeds and marsh plants. These are sometimes detached by a storm, and will float on the surface of the lake. In this situation, it is said that the old birds will steer them into some safe situation. The nest itself is composed of dry grass, lined with down. The female lays from three to six eggs, which she also covers with down. The young are beautifully spotted, and, whilst unable to provide for themselves, are carried on the back of the mother, who, in diving, keeps them under her wing. They occur in all parts of the world, though more frequently met with in the arctic regions. Most of the species inhabit North America.

Grecian Style. (See *Architecture.*)

Greco-Gothic Style. (See *Architecture.*)

Grécourt, Jean-Baptiste-Joseph Willart de; a French ecclesiastic, eminent as a wit and an erotic poet; born in 1684, at Tours, in which city he afterwards obtained the benefice of St. Martin. As the liveliness of his parts was at least equalled by the laxity of his morals, the restraints to which a residence on his preferment necessarily subjected him, soon became intolerable, and he returned to Paris, where he had received his education. In this capital he associated with most of the leading characters of his day, and was a general favorite in the fashionable circles, especially with the marshal d'Estrées. He excelled in epigrams, tales, sonnets, &c.; and of these a collection was made and published (Paris, 1747), in four volumes. Grécourt died April 2, 1743. He is also the author of a poem against the Jesuits, called *Philotanus*. Grécourt's poems are lively and witty, but frivolous.

CONTENTS.

Page.

Evelyn (John) 5
Everdingen (family of) . . . . "
Evertsen (John) . . . . . "
Evidence 6
——— (presumptive) 7
——— (oral or unwritten) . 8
——— (written) 12
Evolutions (in tactics) 14
Evolvents (in mathematics) . 15
Evremond, or Evremont (Charles M. de St. Denis) . "
Ewald (John) . . . . . "
——— (John Lewis) . . . . . "
Ewing (John) 16
Exanthemata . . . . . "
Exarchate . . . . . "
Ex Cathedra . . . . . "
Excavations 17
Excellency 18
Exception, Laws of (see Laws of Exception) . . . . . "
Exchequer . . . . . "
Excise . . . . . "
Excommunication . . . . . "
Execution (in law) 19
——— (see Death, Punishment of) 20
Executor (in law) . . . . . "
Exegesis 21
Exequies . . . . . "
Exercise (see Gymnastics) . . "
Exeter . . . . . "
Exhaustion 22
Exhibition . . . . . "
Exile . . . . . "
Exorcism . . . . . "
Exorcist . . . . . "
Exoteric (see Esoteric) . . . . "
Exotic . . . . . "
Expansion (in physics) . . . . . "
Ex Parte 23
Expectation (in the doctrine of chances) . . . . "
——— (in the doctrine of life annuities) . "
Expectorants (in pharmacy) . 24
Expectoration . . . . . "
Expeditions to the North Pole (see North Pole) . . . . . "
Experimental Philosophy . . . "
Explorator . . . . . "
Explosion (in natural philosophy) 24
Exponent (in mathematics) . . 25
Ex post Facto (in law) . . . . . "
Expressed Oils (in chemistry) "
Extension (in philosophy) . . . "
Extract . . . . . "
Extractor (in midwifery) . . . "
Extrados . . . . . "
Extravasation (in contusions) "
Extremities . . . . . "
Exuviæ . . . . . "
Ey 26
Eyck (Hubert van) . . . . . "
——— (John van) . . . . . "
Eye 27
——— (in architecture) 29
——— (in agriculture and gardening) . . . . . "
——— of a Dome . . . . . "
——— of a Tree . . . . . "
Eyebright . . . . . "
Eyelet Holes . . . . . "
Eyelid . . . . . "
Eyes of a portrait 23
Eylau (Preuss) 29
Eynard . . . . . "
Ezekiel 30

F.

F 30
Fa 31
Fabbroni (Giovanni) . . . . . "
Fabii (family of) . . . . . "
Fabius Maximus (Quintus) . . "
Fable 32
Fablier, and Fabliaux (see French Literature) 33
Fabre d'Eglantine (Philippe François Nazaire) . . . . . "
Fabretti (Raphael) . . . . . "
Fabricius (Caius) 34
——— (John Albert) . . . . "
——— (John Christian) . . . "
Fabroni (Angelo) 35
———, Giovanni (see Fabbroni) . . . . . "
Façade . . . . . "
Facciolato (James) . . . . . "
Face 36
Fachingen-Water . . . . . "
Facial Angle (see Face) 36
Fac-simile . . . . . "
Factor (in arithmetic) . . . . . "
Faden 37
Faenza . . . . . "
Fagel (family of) . . . . . "
Fahlerz (see Copper) . . . . . "
Fahrenheit (Gabriel Daniel) . "
Faïence 38
Failure (see Bankrupt) . . . . . "
Fainéant . . . . . "
Fair . . . . . "
Fairfax (Edward) . . . . . "
——— (lord) 39
Fairfield . . . . . "
Fairies, Fairy Tales . . . . . "
Fairweather Mountain 40
Fairy Circle, or Ring . . . . . "
Fake . . . . . "
Fakir, or Senassy . . . . . "
Falashas . . . . . "
Falcon (see Eagle, and Hawk) 41
Falconer (William) . . . . . "
Falconet (Stephen Maurice) . "
Falconry . . . . . "
Falieri (Marino) 42
Falisci . . . . . "
Falk (John Daniel) . . . . . "
Falkirk 43
Falkland, viscount (see Carey) . . . . . "
Falkland's Islands . . . . . "
Falling Star (in meteorology) "
Fall of Bodies . . . . . "
Fallopian Tubes (in anatomy) 44
Fallopius (Gabriel) . . . . . "
Fallow Land . . . . . "
Falmouth . . . . . "
False (in music) . . . . . "
False Imprisonment (in law) . "
Falsetto 45
Falstaff, sir John . . . . . "
Falster . . . . . "
Falva . . . . . "
Fama . . . . . "
Famagusta . . . . . "
Familiar Spirits . . . . . "
Fanar (see the next article) . . "
Fanariots, or Phanariots . . . . "
Fandango (El) 46
Faneuil Hall . . . . . "

Fanfare 46
Fan-Palm 47
Fans. . . . . "
Fanshawe (sir Richard) . . . . "
Fantasia. . . . . "
Fantin, or Fantee 48
Fantucci (count) . . . . . "
Farce. . . . . "
Faria y Sousa (Manuel) . . . . "
Farina (see Starch) . . . . . "
Farinelli . . . . . "
Farmer (Richard) 49
Farmers-general 50
Farnese (family of) 51
Farnesina (La), or Casino Farnese. 52
Faro of Messina . . . . . "
Faro, or Pharo . . . . . "
Faroe, or Faroer Islands . . . 53
Farquhar (George). . . . . "
Farril (don Gonzalo O') . . . . "
Farthing. 54
Fasces . . . . . "
Fascines. . . . . "
Fashionable . . . . . "
Fashion Pieces . . . . . "
Fasti . . . . . "
Fastolf (sir John). . . . . "
Fasts 55
Fat of Animals. . . . . "
Fatalism 56
Fata Morgana. . . . . "
Fates 57
Fathers of the Church (see Church, Fathers of the) . . . "
Fathom. . . . . "
Fauche-Borel . . . . . "
Faujas-de-Saint-Fond (Barthélemi). 58
Faun . . . . . "
Fauna 59
Faust, or Fust (John) . . . . . "
——— (doctor John) . . . . . "
Faustina 60
Faux Jour. . . . . "
Favart (Charles Simon) . . . . "
Favier 61
Fawkes, Guy (see Gunpowder Plot) . . . . . "
Faxardo (Diego de Saavedra) "
Fayal . . . . . "
Fayence (see Faïence). . . . . "
Fayette, general la (see La Fayette). . . . . "
——— Marie Madelene, countess de la (see La Fayette) . . . . . "
Fayetteville. . . . . "
Fayoum 62
Fé de Bogotá, Santa (see Bogotá). . . . . "
Feasts of the Ancients . . . . . "
Feathers 63
February . . . . . "
Fecula (see Starch) 64
Federal Government . . . . . "
Fee (in law) . . . . . "
Feeder (in canal building). . . 65
Feejee . . . . . "
Feeling. . . . . "
Fehrbellin . . . . . "
Feith (Rhynvis). . . . . "
Feldspar. 66
Fell, Fiell, and Field 67
Fellenberg (Emanuel von) . . "
Felloe 72
Fellowship (in arithmetic) . . . "
——— (single). . . . . "
——— (double) 73
Felo de Se (in law) . . . . . "
Felony (in law) . . . . . "
Fels and Felsen. . . . . "
Felsoe . . . . . "
Felspar (see Feldspar). . . . . "
Feltham (Owen) . . . . . "
Felting 74
Feltre. . . . . "
——— (duke of) . . . . . "
Felucca 75
Feme . . . . . "
——— covert (in law) 77
Fencing . . . . . "
Fen . . . . . "
Fénélon (François de Salignac de la Motte). . . . . "
Fennel 78
Fenton (Elijah) . . . . . "
Feod, or Feud (see Feudal System) . . . . . "
Feodor Iwanowitsch. . . . . "
Feodosia 79
Ferdinand I, II, and III (German emperors) . "
——— I, of Naples. 81
——— III, of Tuscany . . 82
——— V, of Spain 80
——— VII, of Spain. . . . 83
Ferdusi, or Ferdousi (Tshak Ben Scherifsschah) 86
Ferguson (Adam) . . . . . "
——— (James) 87
Fergusson (Robert) . . . . . "
Fermentation . . . . . "
Fernandez, or Juan Fernandez 89
Fernando de Noronha, or Naronho . . . . . "
Fernando Po, or Fernand Pao . . . . . "
Ferney 90
Fernow (Charles Louis) . . . . "
Ferns. . . . . "
Feronia . . . . . "
Ferrand (count). . . . . "
Ferrara 91
Ferreira (Antonio). . . . . "
Ferreras (Juan de). 92
Ferret . . . . . "
Ferro . . . . . "
Ferrocyanic Acid (see Prussic Acid) . . . . . "
Ferte . . . . . "
Fescennine Verses . . . . . "
Fesch (cardinal) 93
Fessler (Ignatius Aurelius) . . "
Festivals and Holydays 94
Festivals, or Feasts (Christian) . . . . . "
Fetich. 97
Fetva (see Mufti) 98
Feudal System . . . . . "
Feuerbach (Paul John Anselm von). 102
Feuillans (in ecclesiastical history) . . . . . "
Fever. 103
———, Dengue. 107
———, Nervous . . . . . "
———, Synocha (inflammatory). 104
Fever, Synochus 107
———, Typhus 105
Fèvre (Tannegui le), or Tanaquillus Faber 108
Feyerabend (family of) . . . 109
Feyjoo y Montenegro (B. J.) "
Fez (a country in Africa) . . "
Fez, or Fas (a city of Morocco) . . . . . "
Feza (see Pasa). 110
Fezzan . . . . . "
Fibrin . . . . . "
Fibrolite . . . . . "
Fichte (John Gottlieb) . . . . "
Fichtelberg 111
Ficino (Marsilio) 112
Fiction (in law) . . . . . "
Fideicommissum (in the civil law). . . . . "
Field Mouse (see Mouse) . . "
Fielding (Henry). . . . . "
——— (Sarah) 113
Field Pieces . . . . . "
——— Works . . . . . "
Fieri facias (in law) . . . . . "
Fiery Cross (see Crantara). "
Fiesco (count). . . . . "
Fiesole 114
Fievée (J.) 115
Fife . . . . . "
Fifth (in music) . . . . . "
Fig-Tree. . . . . "
Figural, or Figurate Numbers. 116
Figurantes. 117
Filangieri (Gaetano). . . . . "
Filbert. 118
Filicaia (Vincenzo da) . . . . "
Filigree Work . . . . . "
Fillet (in architecture). 119
Filtration. . . . . "
Fin. . . . . "
Finale. 120
Finance (see Revenue, Political Economy, and Taxes) "
Finch . . . . . "
——— (earl of Nottingham) . 121
Fine Arts (see Arts, and the different articles on the various branches of the fine arts) . . . . . "
Fingal (Fin Mac Coul, or Fionghal). . . . . "
Fingal's Cave . . . . . "
Finger-Board. . . . . "
Fingering. 122
Finiguerra (Tommaso). . . . "
Finistère, or Finisterre (a department of France) . . . . "
Finisterre (cape) . . . . . "
Finland . . . . . "
Finns 123
Fioravanti (Valentine) . . . . "
Fiors 124
Fir-Tree (see Pine). . . . . "
Fire . . . . . "
——— Balls (in natural philosophy and gunnery) . . 125
——— Damp (see Damps) . . "
——— Dress . . . . . "
——— Engines. . . . . "
——— Engine (Braithwaite's Steam) . . . . . "
——— Fly 126
——— (Greek). . . . . "

Fire-Marble (see Marble) . . 126
—— Ordeal (see Ordeal) . . "
—— Place . . . . . "
—— Ships. 127
—— Weed . . . . . "
—— Works (see Pyrotechny) 128
—— Worship . . . . . "
Firenzuola (see Nannini). . . "
Firmament (in the Ptolemaic astronomy) . . . . . "
Firman . . . . . "
First Fruits and Tenths (in law). . . . . "
Fisc . . . . . "
Fiscal . . . . . "
Fischart (John) . . . . . "
Fischer (Gotthelf) 129
Fisher (John). . . . . "
Fisheries 130
Fisherman's Ring. 131
Fishes. . . . . "
Fitz 133
Fiume . . . . . "
Fixed Oils . . . . . "
—— Stars 134
Fixmillner (Placidus) 135
Fixtures (in law) . . . . . "
Flaccus (Caius Valerius) . . "
Flacius (Mathias). . . . . "
Flag. 136
—— Officer. . . . . "
—— Ship . . . . . "
—— Staff. . . . . "
Flagellants . . . . . "
Flagellation. 137
Flageolet. . . . . "
Flail. 138
Flakes . . . . . "
Flambeau . . . . . "
Flame. . . . . "
Flamel (Nicholas) . . . . . "
Flamen. 139
Flamingo. . . . . "
Flamsteed (John). 140
Flanders . . . . . "
——— (East). . . . . "
——— (West) 141
Flank (in fortification) . . . . "
Flannel. . . . . "
Flanqueurs. . . . . "
Flassan (Gaëtan de Raxis de) . . . . . "
Flat (in music). 142
Flat (level ground). . . . . "
Flax. . . . . "
—— (New Zealand). 143
Flaxman (John). . . . . "
Flechier (Esprit) 144
Flecknoe (Richard) . . . . . "
Fleece, Golden (see Argonauts, and Jason) . . . . . "
Fleece (Order of the Golden) . . . . . "
Fleeces (the Order of the Three Golden) 145
Fleetwood (Charles). . . . . "
Flemish School of Arts (see Netherlands). . . . . "
Flemming, or Flemmig (Paul) . . . . . "
Flesh . . . . . "
Fletcher (Andrew). . . . . "
——— (John). 146
——— (Phineas) . . . . . "
Fleurieu (count of). 146
Fleurus, or Flerus. 147
Fleury (André Hercule de). "
Fleury de Chaboulon (baron) 148
Flibustier (see Buccaneer) . "
Flint. . . . . "
Floating Breakwater . . . . . "
Floetz, Floetz Formations (see Geology) . . . . . "
Flögel (Charles Frederic) . . 149
Flood (see Tide, and Deluge). . . . . "
Floor Timbers. . . . . "
Flora . . . . . "
Floral Games (see Jeux Floraux) . . . . . "
Floréal . . . . . "
Florence. . . . . "
Florentine Work 151
Florian (Jean Pierre Claris de) . . . . . "
Florida. . . . . "
——— Blanca (count of) . . 153
Florin. . . . . "
Floris (Francis). . . . . "
Florus (Lucius Annæus). . . "
Flos (in chemistry). 154
Flotsam, Jetsam and Lagan (in law). . . . . "
Flourish . . . . . "
Flower-Clock . . . . . "
——— de Lis, or Flower de Luce (in heraldry) . . . . . "
Flowers (Artificial) . . . . . "
——— (in chemistry) . . . . "
——— (Language of) . . . "
——— of Antimony (see Antimony). 155
——— of Sulphur (see Sulphur) . . . . . "
——— (Painting of). . . . . "
Flower Trade in Holland . . "
Flowing. 156
Floyd (William) . . . . . "
Fluates (in chemistry) . . . . "
Flüe (Nicholas von der) . . . "
Fluent (in fluxions). 157
Fluid (in physiology) . . . . . "
Fluidity 158
Fluids (Motion of) . . . . . "
Fluor, or Fluor-Spar. . . . . "
Fluoric Acid 159
Flushing 161
Flute . . . . . "
—— (Common) . . . . . "
—— d'Allemand (see Flute, German) . . . . . "
—— German, or German Flute. . . . . "
Flutes (in architecture). . . . "
Flux . . . . . "
Fluxions (see Calculus). . . . 162
Fly (the insect) . . . . . "
—— (in mechanics) . . . . . "
—— Catcher. . . . . "
Flying 163
——— Fish. . . . . "
Fo, Foe, Fohi . . . . . "
Focus (in optics) 165
Fodder, or Fother (in mining) "
Foe, Daniel (see Defoe) . . . "
Fœtus (in anatomy) . . . . . "
Fog . . . . . "
——Bank 166
Foil . . . . . "
Foix, Gaston de (see Gaston) 166
Folard (chevalier Charles de) . . . . . "
Foligno. . . . . "
Folz, Hans (John) . . . . . "
Fomentation (in medicine) . "
Fondi, or Fundi. . . . . "
Fonseca (marchioness of). . "
Fontaine (Jean de la) 167
Fontainebleau 168
Fontana (Domenico) . . . . . "
——— (Felice) 169
Fontanes (marquis de) . . . . "
Fontanges (duchess of). . . . 170
Fontenay . . . . . "
Fontenelle (Bernard le Bovier de) . . . . . "
Fontenoy. 171
Fontevrault, or Fontevraud. "
Fontinalia . . . . . "
Food (Comparative Nutritive Properties of) . . . . . "
Fool (see Jester) . . . . . "
Foolahs (see Foulahs) . . . . "
Fools (Feast of). . . . . "
Foot (a measure) 172
—— (in prosody) . . . . . "
Foota Jalloo . . . . . "
—— Torra. . . . . "
Foote (Samuel) . . . . . "
Forage (in military affairs) . 173
Forbin (count of) . . . . . "
Force (in mechanics) . . . . . "
Forcellini (Egidio, or Giles). 177
Forceps (in surgery). . . . . "
Forcible Entry and Detainder (in law) . . . . . "
Forcing. 178
Ford (John) . . . . . "
Fore . . . . . "
—— and Aft . . . . . "
—— Braces . . . . . "
Forecastle. . . . . "
Foreclosed (in law) . . . . . "
Foreland . . . . . "
Fore Tackle . . . . . "
Forensis . . . . . "
Foreshortening (in drawing and painting) . . . . . "
Forestalling 179
Forests. . . . . "
Forfeiture (in law). 180
Forge. . . . . "
——— Furnace . . . . . "
Forget-me-not . . . . . "
Fork 181
Forli . . . . . "
Forlorn Hope (in the military art) . . . . . "
Form (Printer's) . . . . . "
Formation (Geological) . . . "
Formey (John Samuel). . . . 182
——— (John Louis) . . . . . "
Formic Acid . . . . . "
Formica (see Ant) . . . . . "
Formosa (island in the Chinese sea). . . . . "
——— (island in the Atlantic). . . . . "
———, or Benin, or Argon . . . . . "
Forskal (Peter) 183
Forster (John Reinhold) . . . "
Forster (John George Adam) 184

Forster (George) 184
Fort . . . . . "
Forte-Piano (see Piano-Forte) . . . . . "
Forteventura, or Fuerte-Ventura 185
Forth (a river of Scotland) . "
Fortification. . . . . "
Fortiguerra (Niccolo) 186
Fortress . . . . . "
Fort-Royal. 187
Fortuna. . . . . "
Fortunate Islands (see Canaries) 188
Forum . . . . . "
Foscolo (Ugo) . . . . . "
Foss (in fortification). 189
—— Way . . . . . "
Fossa Carolina (see Carolina) . . . . . "
Fothergill (John) . . . . . "
Fothering . . . . . "
Fou. . . . . "
Fouché (see Otranto, duke of). . . . . "
Foul. . . . . "
Foulahs, or Foolahs 190
Foundation (in architecture) 191
———— (in ecclesiastical or political matters). . . . . "
Founder (to) . . . . . "
——— . . . . . "
Foundling . . . . . "
Fount, or Font. 192
Fountain, or Artificial Fountain (in hydraulics) . . . . . "
Fouqué (Henry Augustus) . "
——— (Frederic) . . . . . "
Fouquier-Tinville (Anthony Quentin) 193
Fourcroy (Anthony Francis de) . . . . . "
Fourteenth (in music). 194
Fourth (in music). . . . . "
Fox . . . . . "
—— (George). 195
—— (John). 196
—— (Charles James). . . . . "
Foxglove. 197
Fox Indians. . . . . "
—— River 198
Foy (Maximilian Sebastian) "
Fra 199
Fracastorius (Jerome) . . . . "
Fraction . . . . . "
Franc 200
France . . . . . "
French Decimal System . 205
History of France. 206
To the Time of Charles the Bald . . . . . "
From Charles the Bald to Hugh Capet 207
The Increase of the Power of the Crown, and the Formation of the Feudal Estates . . "
Military Power and Policy of Conquest in France. 208
France, a European Power under the Bourbons until 1789 . 209
France from 1789 to 1814, or the French Revolution and Napoleon. 210
From the Constituent Assembly to the Establishment of the Republic. 211
The History of the French Republic till the Establishment of the Empire . . . 213
History of the Empire of France to the Restoration of the Bourbons and Royalty 215
History of France, from the Restoration of the Bourbons to the Declaration of Louis-Philip, King of the French. 219
France before the Revolution 239
Organization of the Nation . . . . . "
Constitution of the State 242
Organization and Administration of Government 247
The Revolution (of the 13th century) and its Consequences. 252
French Language 256
——— Literature 257
——— Grammar, &c. . . "
Rhetoric and Criticism . 258
Morals, Politics, and Legislation . . . . . "
Pulpit Eloquence, and Works on Education 259
History, Biography . . . "
Letters, Travels 260
Romances and Novels . 261
Poetry 263
Dramatic Poetry and Art 266
French Literature in Late Years 270
French Mathematics in the 19th century . . . 272
French School of Painting 273
——— Academy 276
——— Sculpture (see Sculpture) . . . . "
——— Politics . . . . . "
——— Church (see Gallican Church) . . . 280
——— Theatre (see Paris Theatre) . . . . . "
France (Isle of) . . . . . "
————, or Mauritius "
Franche-Comté, or Upper Burgundy. . . . . "
Francia (José G. R. de) . . . "
Francis of Assisi (St.) 282
——— of Paula . . . . . "
——— I, of France 283
——— II, of France 284
——— I, of Germany 285
——— (sir Philip) . . . . . "
——— I, of Austria . . . . . "
Franciscans, or Minorites . . 286
François de Neufchâteau (count). 288
Franconia (in Germany) . . 293
———— (in N. H.) . . . . . "
Franconian Wines . . . . . "
Frank 289
——— (a German prefix) . . "
Franke (Augustus H.) . . . . "
Franke's Institution . . . . . "
Frankfort (in Kentucky) . . . 290
———— on the Maine . . . "
———— on the Oder . . . . "
Frankincense . . . . . "
Franking Letters (see Post-Office) . . . . . "
Franklin (Benjamin) . . . . . "
———— (in Missouri) 294
Franklinite . . . . . "
Franks . . . . . "
Franzensbrunn . . . . . "
Frascati . . . . . "
Frasera Caroliniensis, or American Colombo . . . . "
Frat (see Euphrates) 295
Fraternities . . . . . "
Fraticelli 296
Frau . . . . . "
Fraud . . . . . "
Frauenlob (Henry) . . . . . "
Fraunhofer (Joseph von) . . "
Frayssinous (Denis de) 298
Freckles . . . . . "
Fredegonde 299
Frederic . . . . . "
——— I (Barbarossa) . . . "
——— II (Hohenstaufen) . 300
——— William 303
——— Augustus II 304
——— William I. . . . . "
——— Augustus III . . . . "
——— II, of Prussia . . . . "
——— V, of Denmark . . . 307
——— William III 308
——— VI, of Denmark . . 309
Frederick . . . . . "
Fredericksburg 310
Frederickston . . . . . "
Frederics Oord (see Colonies, Pauper) . . . . . "
Free Cities . . . . . "
—— Corps 311
Freedmen . . . . . "
Freedom of Corporation . . . 312
Freehold (in law) . . . . . "
Freemasonry (see Masonry) "
Free-Thinker . . . . . "
Freeze, or Frieze (in commerce) . . . . . "
Freezing, Congelation (in philosophy) . . . . "
——— Point 313
Freight . . . . . "
Freinsheimius (John) . . . . "
Freire (Ramon) . . . . . "
French Beans, or Kidney Beans 314
——— History, Literature, &c. (see France) . . . . . "
Fréret (Nicholas) . . . . . "
Fréron (Elie Catharine) . . . "
Fresco Painting 315
Fresne, du (see Dufresne) . "
Fresnoy (Charles A. du) . . "
Frets . . . . . "
Freude . . . . . "
Freya (see Northern Mythology) . . . . . "

Freyberg (in Saxony) 315
——— (in Baden) 316
Freyre (don Manuel) ..... "
Friburg (canton of Switzerland) 317
———, or Freiburg (town of Switzerland) ..... "
Friction (in mechanics) .... "
——— (in medicine and surgery) 318
Friday ..... "
——— (Good) ..... "
Frieden ..... "
Friedland ..... "
——— (battle of) ..... "
Friendly Cove, or Santa Cruz 319
——— Islands ..... "
——— Societies 320
Friends (see Quakers) .... "
Fries (James Frederic) ... "
Friesland ..... "
——— (East) ..... "
Frieze (in architecture) 321
Frigate (in the navy) ..... "
——— Bird (see Albatros) . "
Frimont (baron de) ..... "
Fringe-Tree ..... "
Frisians ..... "
Fritillaria ..... "
Froben (John) 322
Frobisher (sir Martin) .... "
Frog (see Rana) ..... "
Frog-Fish ..... "
Froissart (John) ..... "
Fronde 323
Frondsberg (George of) ... "
Frontignac 324
Frontinus (Sextus Julius) .. "
Fronto (Marcus Cornelius) . "
Frost ..... "
Fructidor (13th) 325
Frugoni (Carlo Innocenzo) . "
Fruitbearing Society, or Order of Palms 326
Fruitfulness ..... "
Frustum (in mathematics) .. 327
Fry (Elizabeth) ..... "
Fuci ..... "
Fuel 328
Fuentes (count of) 331
Füger (Frederic Henry) ... "
Fugger Family 332
Fugue 333
Fula (see Foulah) ..... "
Fulda (grand-duchy) ..... "
——— (city) ..... "
Fulgurite ..... "
Fuller (Thomas) 334
——— (in factories) ..... "
Fuller's Earth ..... "
Fulling 335
Fulminating ..... "
Fulmination ..... "
Fulminic Acid ..... "
Fulton (Robert) ..... "
Fulvia 337
Fumigation ..... "
Funchal, or Funchial ..... "
Function (in mathematics) .. "
Functions (in physiology) .. "
Fundamental Note ..... "
Funding System ..... "
Funds (see Loan, Sinking Fund, Stocks, Public Stocks, and National Debt) 337
Funds (Public) ..... "
Fundy (bay of) 338
Funen, or Fyen ..... "
Funeral Rites ..... "
Funes (Gregorio) 340
Funfkirchen, or Five Churches, or Pets ..... "
Fungi ..... "
Funk (Godfrey Benedict) .. 341
Furca, or Fork Mountain .. 342
Furies, Eumenides, Erinnyes "
Furt ..... "
Furth ..... "
Furze ..... "
Fur Trade ..... "
Fuseli (Henry) 344
Fusible Metal 345
Fustic Wood ..... "
Fux (John Joseph) ..... "
Fyt (John) 346

G.

G 346
Gabalis ..... "
Gabler (John Philip) 347
Gabres (see Guebres) ..... "
Gabriel ..... "
Gadfly (see Œstrus) ..... "
Gadsden (Christopher) .... "
Gael 348
Gaelic, or Erse ..... "
Gaëta, duke of (see Gaudin) ..... "
——— (in Italy) ..... "
Gage (Thomas) 349
Gagern (baron of) ..... "
Gail (Jean Baptiste) ..... "
Gailliarde 350
Gaius (see Caius) ..... "
Galactometer ..... "
Galatea ..... "
Galatia ..... "
Galaxy (in astronomy) .. "
Galba (Sergius, or Servius Sulpicius) ..... "
Galbanum 351
Galen (Claudius) ..... "
——— (Christopher Bernhard van) ..... "
Galena (in mineralogy) ... 352
——— (town in Illinois) ... "
Galenists (see Anabaptists) "
Galiani (Ferdinand) ..... "
Galicia, and Lodomiria (in Austria) 353
——— (in Spain) ..... "
Galilee 354
Galilei (Galileo) ..... "
Gall (John Joseph) 356
——— (in animal economy) .. 357
——— Bladder ..... "
——— (in natural history) ... "
——— Fly ..... "
——— Nuts (see Gall-Fly) .. 358
——— Stones ..... "
Galland (Anthony) ..... "
Gallantry ..... "
Gallates ..... "
Galleon ..... "
Gallery (in architecture) ... "
——— (in a ship) 359
——— (in fortification) ... "
Galley (a small vessel) 359
———, or Gally (in a ship) "
Galley-Slave ..... "
Gallia (see Gaul) ..... "
Gallic Acid ..... "
Gallican Church 360
Gallicism 361
Gallimatias ..... "
Gallinæ (in ornithology) ... "
Galling Fire ..... "
——— of a Horse's Back .. "
Galliot ..... "
Gallitzin (princess) ..... "
Gallo (marquis of) ..... "
Gallon 362
Galloon (in commerce) .... "
Gally (in printing) ..... "
Galt (John) ..... "
Galuppi (Baldessaro) ..... "
Galvani (Luigi) ..... "
Galvanism 363
The Construction of the Galvanic Apparatus, &c. 364
Electrical Effects of the Galvanic Battery 366
Chemical Effects of Galvanism ..... "
Theory of Galvanism ... 371
Gama (Vasco de) 372
Gambia, or Gambria, or Gamba 374
Gamboge ..... "
Game ..... "
——— Laws ..... "
Games (in antiquity) 375
Gaming (see Sports, unlawful) ..... "
Gamla ..... "
Gammut ..... "
Gang ..... "
Ganga ..... "
Ganganelli (see Clement XIV) ..... "
Gang Board ..... "
Ganges ..... "
Gangrene 376
Gangway ..... "
Gannet ..... "
Gantlope, or Gauntlope ... 377
Ganymede ..... "
Gaol (see Jail) ..... "
Gar ..... "
Garat (two of this name) ... "
Garcia, Madame (see Malibran) 378
Garcilaso de la Vega ..... "
Gard ..... "
——— (Pont du) ..... "
Garden (Alexander) ..... "
Gardening 379
Gardiner (Stephen) 380
——— (James) 381
Gar Fish ..... "
Gargara ..... "
Garlic ..... "
Garnerin (two brothers) ... 382
Garnet ..... "
Garofalo (Benvenuto) 383
Garonne (river of France) . "
——— (department of France) ..... "
Garrick (David) ..... "
——— (Eva Maria) 385
Garrison ..... "
Garter (Order of the) ..... "

Garth (Samuel) 385
Garumna 386
Garve (Christian) . . . . . "
Gas . . . . . "
——lighting 387
Gascony 388
Gasket 389
Gassendi (Peter) . . . . . "
Gaston de Foix . . . . . "
Gastric . . . . . "
——— Juice . . . . . "
——— System 390
Gastromantia . . . . . "
Gastronomy . . . . . "
Gates (Horatio) . . . . . "
Gàtinais, or Gastinais 391
Gatterer (John Christopher) "
Gau (a German word) . . . . "
—— (Charles Francis) . . . . "
Gaudin (Martin M. C.) 392
Gaul, Gallia . . . . . "
Gaurs (see Guebres) 396
Gauss (Charles Frederic) . . "
Gaut 397
Gauze (in commerce) . . . . "
Gay (John) . . . . . "
—— Lussac 398
Gaza (Theodore) . . . . . "
——— (town) . . . . . "
Gazelle (see Antelope) . . . "
Gazette . . . . . "
Gazetteer . . . . . "
Gearing 399
Gebel . . . . . "
Geber . . . . . "
Gebers (see Guebers) . . . . "
Gebirge . . . . . "
Gecko . . . . . "
Geddes (Alexander) 400
Gedike (Frederic) . . . . . "
Gehenna (see Tophet) . . . . "
Gehler (John S. T.) . . . . . "
Geistics . . . . . "
Gelatine (in chemistry) 401
Geld . . . . . "
Gelée, C. (see Claude Lorraine) "
Gellert (Christian F.) . . . . . "
Gellius (Aulus) . . . . . "
Gelly (see Jelly) 402
Gelon . . . . . "
Gemappes (see Jemappes) . "
Gemini . . . . . "
Gems, or Precious Stones . "
——— (Artificial) 403
——— (Imitation of Antique) "
Gem-Sculpture . . . . . "
Gendarmes (see Gens d'Armes) 405
Genealogy . . . . . "
General Issue (in law) 406
——— of an army . . . . . "
Generated (in mathematics) "
Generation (in chronology) . 407
——— of Steam (see Steam) . . . . . "
Generator (see Steam Engine) . . . . . "
Generical Name (in natural history) . . . . . "
Genesareth, or Gennezareth "
Genesee . . . . . "
Genesis (in mathematics) . . "
——— (in Scripture) . . . . "
Genethliacon . . . . . "
Geneva . . . . . "
Geneva, or Gin 409
Genevieve, St. (two so named) "
Gengis-Khan 410
Genius 411
Genlis (countess de) 413
Genoa 414
Gens d'Armes 416
Gentian 417
Gentiles . . . . . "
Gentleman . . . . . "
Gentoo (see Hindoo) 418
Gentz (Frederic von) . . . . . "
Geocentric . . . . . "
Geocyclic Machine . . . . . "
Geoffrey of Monmouth 419
Geoffrin (Madame) . . . . . "
Geoffroy (Julien Louis) . . . "
Geography 420
Geology 423
Stratification and Division of Rocks 427
Divisions of Time in the Formation of Mountains, &c. 428
Geomancy 430
Geometry 431
George (Lake) 432
——— (St.) 433
——— I . . . . . "
——— II 434
——— III . . . . . "
——— IV 436
——— Cadoudal 437
——— Noble 438
Georgetown (in District of Columbia) . "
——— (in S. C.) 439
Georgia (in the U. S.) . . . . "
——— (Gulf of) 441
——— (in Asia) . . . . . "
Georgic . . . . . "
Georgicon . . . . . "
Georgium Sidus (see Planets) 442
Gepidæ . . . . . "
Gerando (Joseph Marie de). "
Geranium . . . . . "
Gérard (Francis) . . . . . "
——— (count) 443
Gerhard (Paul) . . . . . "
Germain (St.) . . . . . "
——— (count St.) . . . . . "
Germanicus (Cæsar) 444
German Ocean, or North Sea 445
Germantown . . . . . "
Germany (Geography and Statistics of) . . . . . "
German Commerce 447
——— Empire 448
Germanic Confederation . 450
History of Germany 452
Germany from 1806 to 1815 461
German Language 462
——— Literature and Science 464
——— Prose 469
——— Poetry 471
——— Criticism 475
——— Philosophy (see Philosophy) . . 476
——— School of Art . . . "
——— School of Painting 477
——— Law 479
Gerning (John Christian) . . 479
Gerona 480
Gerontes . . . . . "
Gerry (Elbridge) . . . . . "
Gersdorf (Charles F. W. von) 481
Gerstenberg (Henry W. von) 482
Geryon . . . . . "
Gesenius (William) . . . . . "
Gesner (Conrad) 483
——— (John Matthew) . . . "
Gessner (Solomon) . . . . . "
Geyer (Eric Gustavus) . . . 484
Ghauts (see Gauts) . . . . . "
Ghent . . . . . "
——— (Treaty of) 485
Gherardesca (family of) . . "
Ghibelines (see Guelfs) 486
Ghiberti (Lorenzo) . . . . . "
Ghirlandaio (Domenico) . . . 487
Ghost (Holy) . . . . . "
——, Holy (Order of the) . 488
Gianni (Francesco) . . . . . "
Giannone (Pietro) . . . . . "
Giant Beds 490
Giants 489
Giant's Causeway 490
Giaour 491
Gibbon (Edward) . . . . . "
Gibelines (see Guelfs) 492
Gibraltar . . . . . "
——— (Straits of) 493
Gichtel (John George) . . . . "
Gideon 494
Giebichenstein . . . . . "
Giessen . . . . . "
Gifford (William) . . . . . "
Gig (see Boat) . . . . . "
Gigli (Jerome) . . . . . "
Gilbert (sir Humphrey) . . . 495
——— (two of this name) . . "
Gild (see Guild) . . . . . "
Gildas (Sapiens) . . . . . "
Gilding . . . . . "
Gilead (the Mountains of) . 496
Giles (St.) . . . . . "
Gilolo . . . . . "
Gilray (see Caricature) . . . "
Gimbals . . . . . "
Gimle (see Northern Mythology) . . . . . "
Gin (see Geneva) . . . . . "
Gin, Cotton (see Cotton) . . "
Ginger . . . . . "
Ginguené (Peter Louis) . . . 497
Ginseng 498
Gioja (Flavio) . . . . . "
Giordano (Luke) . . . . . "
Giorgione di Castelfranco . . 499
Giotto . . . . . "
Gipsy (see Gypsy) . . . . . "
Giraffe (see Camelopard) . . "
Girardon (Francis) . . . . . "
Girodet (Trioson Nicholas) . 500
Gironde . . . . . "
Girondists . . . . . "
Girouette 502
Giulio Romano . . . . . "
Giunti . . . . . "
Giustiniani Collection 503
Given . . . . . "
Givet (see Charlemont) . . . "
Gizeh . . . . . "
Gizzard (see Stomach) . . . . "
Glaciers . . . . . "
Glacis (in fortification) 504

Gladiators 504
Gladiatorial Statues 505
Glair Eggs . . . . . "
Glamour, or Glamer . . . . . "
Glanvil, or Glanville (Ranulph de) . . . . . "
Glarus (canton) . . . . . "
——— (town) . . . . . "
Glasgow . . . . . "
Glass 506
Processes in making 508
Achromatic Flint Glass . . 509
Drops of Glass 510
Glass Galls . . . . . "
——— Threads . . . . . "
——— Windows . . . . . "
——— (Painting on) . . . . "
Night Glass 511
Half-hour Glass . . . . . "
Glatz (county and circle) . . "
——— (fortress) . . . . . "
Glauber (John Rodolph) . . "
Glaucus 512
Glazing . . . . . "
Gleditsch (John Theophilus) "
Glee (in music) . . . . . "
Gleichen (Ernest) . . . . . "
Gleim (John William Louis) 513
Glendower (Owen) . . . . . "
Globe 514
Globular Chart 520
Glogau, or Gross-Glogau . . "
Gloria in Excelsis, Gloria Patri 521
Gloriosa Superba . . . . . "
Gloss . . . . . "
Glottis . . . . . "
Gloucester . . . . . "
Glover (Richard) . . . . . "
Gloves . . . . . "
Glow-Worm 522
Glucina, or Glucine . . . . . "
Gluck (chevalier Christopher) 523
Gluckstadt 524
Glue . . . . . "
Gluten 525
Glutton 526
Glyptic . . . . . "
Glyptotheca . . . . . "
Gmelin (several of this name) "
Gnade 527
Gnat . . . . . "
Gneisenau (count of) 528
Gneiss . . . . . "
Gnome (in figurative language) 529
——— (in modern mythology) . . . . . "
Gnomon (in astronomy) . . . "
——— (in dialing) 530
——— (in geometry) . . . . "
Gnomonics . . . . . "
Gnostics . . . . . "
Gnu 533
Goa (district of India) . . . . . "
——— (city of India) . . . . . "
Goat 534
Goatsucker 535
Gobelin (Giles) . . . . . "
——— Tapestry . . . . . "
Goby . . . . . "
God, Truce of (see Truce) . "
——— save the King . . . . . "
——— Father 536
God Mother 536
Goderich (lord viscount) . . "
Godfrey of Bouillon . . . . . "
——— of Strasburg 537
——— (Thomas) . . . . . "
——— (son of the foregoing) 538
——— (sir Edmundbury) . "
Godiva (see Coventry) . . . "
Godman (doctor John D.) . . "
Godolphin (Sidney) 539
Godoy (don Manuel de) . . . "
Godwin (Mary) 540
——— (William) 541
Gœckingk (Leopold Frederic Günther von) . . . . . "
Gœrres (John Joseph) 542
Goertz (baron) 543
Goethe (John Wolfgang von) "
Gœtz von Berlichingen (see Berlichingen) 546
Goëz (baron of) . . . . . "
Goffe (William) . . . . . "
Gog and Magog 547
Goggles (in surgery) . . . . . "
Goitre (see Wen) . . . . . "
Golconda (province of Hindostan) . . . . . "
——— (fortress of Hindostan) . . . . . "
Gold . . . . . "
——— Beating (see Gold) . . . 550
——— Thread . . . . . "
——— Wire (see Gold) . . . . "
——— Coast . . . . . "
Golden Fleece (see Jason, and Argonauts) . . . "
———, Order of the, and The Three Golden Fleeces (see Fleece, Golden) . . . . . "
Golden Number (in chronology) . . . . . "
——— Rod . . . . . "
——— Rule 551
Gold-Finch (see Finch) . . . "
——— Fish . . . . . "
Goldoni (Charles) . . . . . "
Goldsmith, or Silversmith . . 553
——— (Oliver) . . . . . "
Golgotha (see Calvary) . . . 554
Golownin (W. M.) . . . . . "
Gomarus, and Gomarists (see Reformed Church) . . 555
Gondar . . . . . "
Gondola . . . . . "
Gondolier . . . . . "
Gong . . . . . "
Gongora (Louis) . . . . . "
Gonsalvo (Hernandez y Aquilar) 556
Gonzaga (family of) . . . . . "
Good Friday (see Friday, Good) 557
——— (John Mason) . . . . . "
Goodwin Sands . . . . . "
Gookin (Daniel) . . . . . "
Goose 558
Gooseberry 559
Goose-foot . . . . . "
Gorani (count of) . . . . . "
Gordian Knot (see Alexander the Great, and Gordius) . . . . . "
Gordius 559
Gordon (George) . . . . . "
——— (William, D. D.) . . 560
Gore (Christopher) . . . . . "
Goree (a seaport) . . . . . "
——— (an island) . . . . . "
Gorgias 561
Gorgones (three sisters) . . . "
Gorham (Nathaniel) . . . . . "
Gorlitz . . . . . "
Gortz (see Gœrtz) 562
Goshawk . . . . . "
Goshen (in ancient geography) . . . . . "
Gospel . . . . . "
Gosport . . . . . "
Gossamer . . . . . "
Gossec (Francis Joseph) . . . "
Gotha (duchy) 563
——— (town) . . . . . "
Gothard (St.) . . . . . "
Gothic Style (see Architecture) 564
Goths . . . . . "
Gottenburg 565
Gottingen . . . . . "
Gottorp (see Holstein) 566
Gottsched (John Christopher) . . . . . "
Gouda, or Tergouw . . . . . "
Gouge . . . . . "
Gourd . . . . . "
Gourgaud (baron de) . . . . . "
Gout, or Arthritis 568
Government, Forms of (see Political Institutions) . . . . "
Governor . . . . . "
Gower (John) 569
Goyas . . . . . "
Gracchus (Tiberius Sempronius, and Caius) . . . . . "
Grace 572
——— (Days of) 573
Graces . . . . . "
Gracioso 574
Græcia, Magna (see Magna Græcia) . . . . . "
Græfe (Charles Ferdinand) . "
Grævius, or Græfe (John George) . . . . . "
Grafting . . . . . "
Graham (George) 575
Grahame (James) . . . . . "
Grain (a weight) . . . . . "
——— (corn) . . . . . "
Grainger (James) . . . . . "
Grammar (see Language) . . 576
Gramme . . . . . "
Grammont (count of) . . . . "
Grampian Mountains . . . . . "
Granada (province in Spain) "
——— (city in Spain) . . . "
Granade (see Grenade) . . . "
Grand Bank of Newfoundland 577
Grandee . . . . . "
Grand Jury (see Jury, Grand) 578
Granite . . . . . "
Grant (in law) 579
Granulation . . . . . "
——— (in surgery) . . . "
Granvella (cardinal de) . . . 580
Grape (see Vine) . . . . . "
——— Shot . . . . . "

Graphite (see Plumbago) .. 581
Grapling Fire ..... "
Grapnel, or Grapling ..... "
Grasses ..... "
Grasshopper (see Locust).. "
Grate ..... "
Gratian ..... "
Gratings..... "
Grattan (Henry) ..... "
Gratz 582
Graun (Charles Henry) ... "
Grave (in music) ..... "
—— Accent (in grammar) "
Gravel (see Stone)..... "
Graver (see Engraving) ... "
S'Gravesande (William J. van) ..... "
Gravesend 583
Gravina (John Vincent) ... "
Graving 583
Gravitation ..... "
Gravity (in physics) ..... "
———, Centre of (in mechanics) 586
——— (in music) ..... "
Gray (Thomas)..... "
——, lady Jane (see Grey). 587
Great Bahama (see Bahamas) .... "
——— Bank (see Bahama Bank) ... "
Great St. Bernard (see Bernard, Great St.) ... "
Great Britain (Geography and Statistics of) .... "
Great Britain and Ireland (History of) 591
The Civil State of Great Britain 604
English Constitution 606
The King ..... "
The Parliament..... 608
The Rights of the People 612
The Administration of the Government ..... "
Great Circle Sailing..... 613
Great Kenawha River (see Kenawha)..... "
Grebe ..... "
Grecian Style (see Architecture) ..... "
Greco-Gothic Style (see Architecture)..... "
Grécourt (Jean-Baptiste-Joseph Willart de)..... "

STATISTICAL VIEW OF ALL THE

EUROPEAN STATES.	AREA in English square miles.	POPULATION.					
		Catholics.	Protestants.	Greeks.	Mohammedans.	Jews.	Total.
1 Anhalt-Bernburg,	334	—	38,510	—	—	390	38,900
2 " Dessau, .	345	1,200	56,800	—	—	1,270	59,270
3 " Cöthen, .	330	360	34,835	—	—	415	35,610
4 Austria, ...	258,603	25,650,000	3,000,000	2,970,000	500	480,000	32,100,500
5 Baden, ...	5,926	730,808	343,173	—	—	16,930	1,090,911
6 Bavaria, ...	31,317	2,880,383	1,094,633	—	—	57,574	4,032,590
7 Bentinck, ...	25	—	2,900	—	—	—	2,900
8 Brunswick, . . .	1,491	2,500	240,400	—	—	1,300	244,200
9 Bremen, ...	68	1,500	50,000	—	—	—	51,500
10 British Empire, .	117,788	6,085,300	16,197,321	—	—	15,000	22,297,621
11 Cracow, ...	494	100,812	19,000	—	—	7,288	127,100
12 Denmark, ...	52,268	2,000	2,049,531	—	—	6,000	2,057,531
13 Frankfort on M.*	91	6,000	42,800	—	—	5,200	54,000
14 France, ...	213,838	31,099,518	892,947	—	—	60,000	32,052,465
15 Greece, ...	?	—	—	—	—	—	550,000
16 Hamburg, ...	150	3,060	139,440	—	—	7,500	150,000
17 Hanover, ...	14,735	200,000	1,370,574	—	—	12,000	1,582,574
18 Hesse-Cassel, . .	4,428	105,000	492,300	—	—	5,400	602,700
19 " Darmstadt,	3,922	120,000	582,900	—	—	16,000	718,900
20 " Homburg,	166	2,931	17,683	—	—	1,050	21,664
21 Hoh. Hechingen,†	129	15,000	—	—	—	—	15,000
22 " Sigmaringen,	336	39,600	—	—	—	400	40,000
23 Ionian Islands, .	998	35,200	300	133,898	—	5,500	175,398
24 Lichtenstein, . .	51	5,300	—	—	—	—	5,300
25 Lippe-Detmold, .	436	1,600	75,118	—	—	—	76,718
26 Lucca, ...	413	145,000	—	—	—	—	145,000
27 Lübeck, ...	143	400	45,703	—	—	400	46,503
28 San Marino, . . .	22	7,000	—	—	—	—	7,000
29 Meck. Schwerin,‡	4,746	957	437,105	—	—	3,102	441,164
30 " Strelitz, .	765	50	78,510	—	—	833	79,393
31 Modena, ...	2,092	377,500	—	—	—	1,500	379,000
32 Nassau, ...	1,753	157,638	184,651	—	—	5,717	348,006
33 Netherlands, . .	25,367	3,660,000	3,237,500	—	—	80,000	6,977,500
34 Oldenburg, . . .	2,459	70,700	175,538	—	—	970	247,208
35 Parma, ...	2,203	437,400	—	—	—	—	437,400
36 Portugal, ...	36,510	3,782,550	—	—	—	—	3,782,550
37 Prussia, ...	107,159	4,694,000	7,930,403	—	—	154,000	12,778,403
38 Reuss, elder line,	145	—	24,020	—	—	80	24,100
39 " younger "	447	—	57,470	—	—	220	57,690
40 Russia, ...	1,414,436	5,500,000	2,658,500	33,326,500	150,000	360,000	41,995,000
41 Sardinia, ...	28,912	4,142,177	22,000	—	—	3,200	4,167,377
42 Saxony, ...	575	48,000	1,350,000	—	—	2,000	1,400,000
43 Saxe-Altenburg,	496	150	109,343	—	—	—	109,493
44 " Coburg, . .	1,036	11,500	130,593	—	—	1,200	143,293
45 " Meiningen,	884	400	128,239	—	—	950	129,589
46 " Weimar, .	1,416	9,512	210,911	—	—	1,231	221,654
47 Schaumb. Lippe,§	206	100	25,500	—	—	—	25,600
48 Sch. Rudolstadt,‖	404	200	56,625	—	—	160	56,985
49 " Sondershausen,	358	200	47,906	—	—	—	48,106
50 Sicilies (the Two),	41,284	7,412,717	—	—	—	2,000	7,414,717
51 States of Church,	17,210	2,468,940	—	—	—	15,000	2,483,940
52 Sweden, ...	291,163	5,000	3,869,700	—	—	4,000	3,878,700
53 Switzerland, . .	14,761	817,110	1,217,760	—	—	1,810	2,036,680
54 Spain, ...	179,074	13,651,172	—	—	—	—	13,651,172
55 Turkey, ...	203,566	310,000	—	5,878,000	2,890,000	315,000	9,393,000
56 Tuscany, ...	8,381	1,291,130	—	—	—	9,400	1,300,530
57 Waldeck, ...	459	800	52,700	—	—	500	54,000
58 Würtemberg, . .	7,615	464,000	1,062,253	—	—	9,150	1,535,403
Total, ...	3,104,780	116,559,075	49,847,495	42,308,398	3,040,500	1,671,640	213,977,108

* Frankfort on the Maine.
† Hohenzollern-Hechingen.
‡ Mecklenburg-Schwerin.
§ Schaumburg-Lippe.
‖ Schwarzburg-Rudolstadt.

EUROPEAN STATES, FOR 1828.

GOVERNMENT.*	FINANCES.		LAND FORCES.		SEA FORCES.	
	Revenue.	Debt.	In peace.	In war.	Peace.	War.
	Dollars.	Dollars.			Sail.	Sail.
1 Absolute; provincial estates. . . .	130,000	240,000	370	740	—	—
2 ——————————, . . .	234,000	200,000	529	1,058	—	—
3 ——————————, . . .	92,000	640,000	324	648	—	—
4 Absolute; estates,†	52,000,000	200,000,000	271,404	750,504	31	31
5 Constitutional, ...	3,932,880	6,392,424	11,566	20,000	—	—
6 ——————, ...	12,031,547	44,492,257	53,898	71,600	—	—
7 Absolute, ...	62,800	60,000	—	—	—	—
8 Absolute; provincial estates, . . .	950,773	1,400,000	2,432	4,192	—	—
9 Republic, ...	160,000	1,200,000	385	770	—	—
10 Constitutional, ...	223,849,600	3,490,396,768	90,519	378,370	610	1,050
11 Republic, und. protec. Rus. Prus. & Aus.	133,248	10,000	—	—	—	—
12 Absolute, ...	4,030,000	40,000,000	36,819	74,000	97	120
13 Republic, ...	304,000	3,200,000	475	946	—	—
14 Constitutional, ...	157,760,000	430,000,000	281,000	320,000	329	330
15 ?	—	—	2,580	—	—	50
16 Republic, ...	600,000	5,200,000	1,050	2,596	—	—
17 Estates, ...	4,680,000	12,000,000	12,940	26,106	—	—
18 Absolute, ...	1,800,000	780,000	9,859	11,353	—	—
19 Constitutional, ...	2,351,456	5,589,450	8,421	12,390	—	—
20 Absolute, ...	72,000	180,000	200	400	—	—
21 ————, ...	48,000	—	145	290	—	—
22 ————, ...	120,000	200,000	370	740	—	—
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25 Absolute; estates, ...	196,000	280,000	690	1,380	—	—
26 Constitutional, ...	288,000	600,000	800	800	3	3
27 Republic, ...	160,000	1,200,000	406	812	—	—
28 Republic, protected by the pope, . .	12,000	—	—	—	—	—
29 Estates, with considerable power, .	920,000	3,800,000	3,137	7,160	—	—
30 ——————————, .	200,000	200,000	742	1,434	—	—
31 Absolute, ...	600,000	400,000	1,360	1,360	—	—
32 Estates, ...	724,000	2,000,000	2,800	6,056	—	—
33 Constitutional, ...	12,000,000	178,078,670	43,297	69,472	93	150
34 Absolute, ...	600,000	—	2,177	4,354	—	—
35 Absolute, ...	600,000	2,000,000	1,320	1,320	—	—
36 ?	8,740,800	24,000,000	40,000	70,000	23	23
37 Absolute; provincial estates, . . .	30,477,600	114,340,440	165,000	524,123	—	—
38 Absolute; estates, ...	56,000	2,000,000	206	412	—	—
39 ——————————.	169,000	430,000	538	1,076	—	—
40 Absolute, ...	52,000,000	200,000,000	600,000	1,039,117	12	12
41 ————, ...	8,740,800	24,000,000	28,000	60,000	8	8
42 Estates, ...	4,400,000	12,800,000	13,307	24,000	—	—
43 ————, ...	240,000	329,640	982	1,964	—	—
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46 Constitutional, ...	719,734	2,400,000	2,164	4,020	—	—
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54 Absolute; cortes, ...	26,520,000	230,443,062	46,000	173,550	34	60
55 Despotism, ...	11,200,000	36,000,000	80,000	200,000	80	160
56 Absolute, ...	—	—	8,000	8,000	—	—
57 Estates, ...	160,000	480,000	518	1,036	—	—
58 Constitutional, ...	3,342,318	10,942,766	4,906	27,910	—	—
Total, ...	658,347,899	5,341,721,211	1,909,175	4,578,430	1,368	2,641

* The word *Constitutional* is set against those states which have representative governments in the modern sense of the term. The words *Absolute, estates*, indicate that though the representation of the estates exists, the government is, in fact, absolute; as in Prussia, where the power of the estates is limited to expressing their opinions on subjects which the government lays before them. The word *Estates*, simply, indicates, that the estates have actually some share in the government. When not otherwise stated, the government is monarchical.

† Austria is composed of very different parts. (See *Austria*, and *Constitution*.)

‡ Among these are 216 xebecs.

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4152